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# THE IRON TRADE REVIEW

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CLEVELAND, AUGUST 22, 1918

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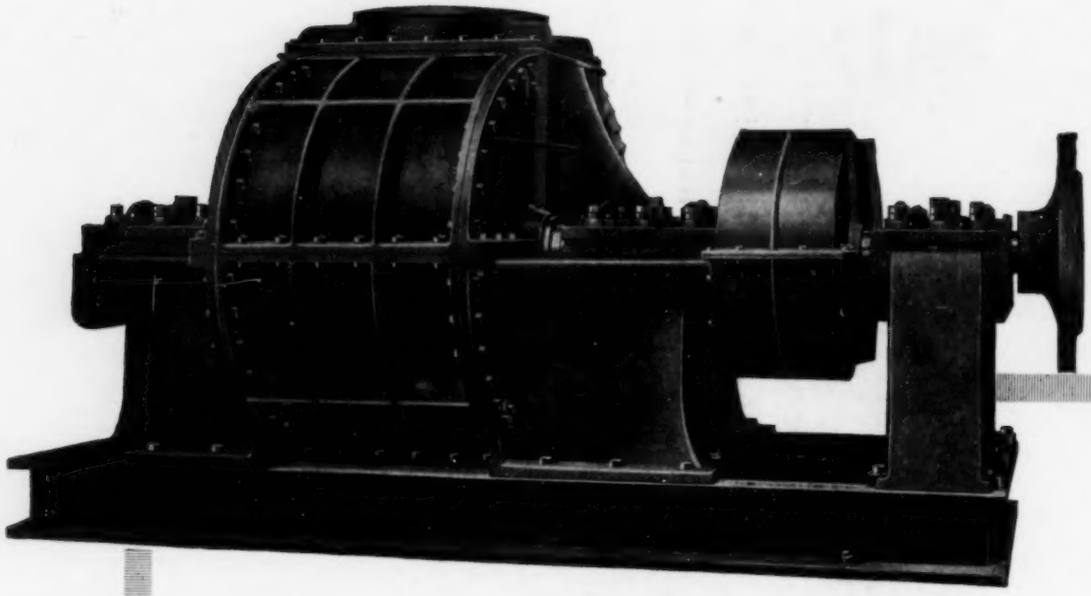

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NEW YORK
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THE IRON TRADE REVIEW

*Vol. LXIII* Cleveland, August 22, 1918 *No. 8*

# Enlarged Army Calls For More Steel

## With Four Million Men in France in 1919 Ordnance Program Must be Doubled—How to Maintain Output With Less Men Will be Problem—Fuel Question Also Vital

FOUR million men in France by the end of June next year will win the decisive victory toward which all of our energies are being strained only if they can be properly munitioned and supplied. The effect of our enlarged military program, which involves drafting every available man between the ages of 18 and 45, on the steel industry, therefore, will be tremendous. That iron and steel manufacturers will be called upon for even greater exertions is inevitable. The echoes of General March's recent statements to congress will reverberate in iron ore mines, along the arteries of lake commerce, and among the blast furnaces and steel plants for months to come. With the enlarged army must go thousands of guns, millions of shells and hundreds of ships, to mention only a few fundamentals.

**Manpower for Industry**

All this calls for increasing quantities of steel, which must be obtained, as previously pointed out in these columns, by scientific distribution and the maintenance of maximum production. Special attention to fuel and labor supplies is necessary. Production, now scarcely sufficient for essential needs, must be obtained with shortened manpower; for although steel manufacture stands high in the list of protected industries it is nevertheless bound to suffer to some extent from the new draft law. Day by day, in fact, the necessity for mobilizing labor power to support production is becoming more evident. The new plan of recruiting common labor through a central agency is bearing some fruit and the manpower difficulties of the Pittsburgh district seem in a fair way toward solution for the present through the importation of thousands of additional men from other parts of the country and less essential work.

It is expected standard rail prices will be fixed at a meeting of the special subcommittee of the American Iron and Steel institute and a special committee of the war industries board held in Washington on Thursday. Locomotive plates have first place on mill schedules. Jobbers are experiencing difficulty in getting their replacement orders filled on account of the congestion of orders on mill books carrying higher priority numbers. Japan is in the market for 17,000 car axles and French inquiries for 7000 to 8000 car and locomotive tires have appeared.

**Production at High Level**

Production continues at a high level. Plate output is 90 per cent in the east. That it is not 100 per cent is due to labor dilution and various temporary causes. Coke production is large but is causing some concern. A western pig iron maker has been obliged to bank three blast furnaces on account of coke shortage; similar troubles are reported elsewhere. Attention is again being directed to improving the quality of coke. In spite of record-breaking mill production there is no evidence of relief from the acute stringency existing in nearly all finished steel lines. Shapes, plates, sheets and bars are being sold almost exclusively on an allocation basis. Pig iron is growing scarcer and allocations have now exceeded 750,000 tons. The steel consumer is getting his first taste of real war conditions.

**Steel for the War**

Heavy tonnages for war purposes continue to be placed. In the Chicago district an inquiry for 1500 tons of heavy sheets for airplane bombs has been put out. Pershing will need 30,000 kegs of spikes to fasten the 200,000 tons of rails recently ordered. Contracts for 20,000 high and low-side standard gondola cars for United States railways in France have recently been distributed among leading builders. Orders for 3-inch and 6-inch shell steel have been increased in the Youngstown district. Orders have been placed for 12,000 tons of plates for the British and 5000 tons for the French. Allocations shortly will be made covering 122,000 tons of plates for Japanese shipyards at the government price now prevailing.

AUGUST 22, 1918

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## Where Indifference is Reprehensible

INDIFFERENCE to the interests of America in these days is equivalent to disloyalty. That is so because the effect is practically the same. Indeed, if there is any distinction, the indifferent man is more of a menace than the disloyal man. The former cannot be hauled up by the authorities and punished by imprisonment or shooting while the latter can.

The indifference shown by many foreign laborers, not necessarily those who are extracted from races with which we are at war, is altogether too prevalent and is especially so in the coal mines, the most vital source today upon which depends victory. Without coal nothing can be done in the way of building up and maintaining a war machine. Appeals have been made to these laborers for some time and still are being made. No doubt results have been accomplished and the campaign should be continued. Nevertheless, it is plain that there are those who are interested only in getting high wages and loafing, with the saloon acting as a magnet to draw their time and money. This class of men who have emigrated to America to escape industrial and social oppression are misconstruing the principles of our republic. They have interpreted liberty to mean license. Only their own selfish motives are taken into account. They retain their old country customs, read papers printed in their native tongue, and do not attempt to acquire the customs and language of this country.

Our own free and easy laws are partly responsible for this condition, but by no means are the immigrants without blame. Rigid laws should be adopted and put into effect at once by which these indifferent individuals can be forced to work steadily. Putting them in uniforms is not the desirable thing to do. The uniform is for America and Americans, and not for those who represent neither. Deportation should be awaiting the latter after the war. Until some such system is woven into our laws, the much heralded melting pot will continue to yield entirely too much dross.

## Will We Adopt the Metric System?

THOSE who are conversant with the metric system realize that it is a far more simple medium for expressing values of weights and measures than is the more cumbersome English system. Again, in figuring problems calling for the use of higher mathematics,, the metric system is more practicable as the four-point decimals necessary in figuring in fractional parts of an inch are eliminated.

To adopt the metric system universally, however, will entail an enormous expense that the theoretical exponents fail to appreciate fully. The reason for this lies in the fact that such champions of the new system give scant thought to the economic phases of everyday, efficient production methods.

For generations, we have been taught to think in inches, feet, yards, miles, ounces, pounds, tons, etc., so that millimeters, meters, kilograms, etc., fail to convey to us an adequate meaning of values. Knowledge of the metric system is easily acquired, to be sure, just as a knowledge of French or Spanish is possible for the average person who is willing to devote time to the study necessary to acquire it. However, in considering the metric system, the question is often asked: Is it worth while?

Other factors that many exponents of the metric system fail to consider seriously is the large loss to American manufacturers in small tools such as drills, reamers, taps, etc., and the loss to mechanics in measuring tools such as verniers, scales and micrometers, that the general adoption of the metric system would bring about. This loss would run into millions of dollars at the least. Again, the change from one system to another cannot be made in a few months or even a few years—it must come gradually if it is to come at all. Thus, in the period of transition, we should be compelled to use two systems which would add an extra expense.

Manufacturers of tools used in the watchmaking industry, staff lathes for example, often divide the English inch into fifths, tenths, twentieths, fiftieths and hundredths instead of eighths, sixteenths, thirty-

seconds and sixty-fourths. The object of this is to eliminate working in decimals of four figures. For example, instead of using 7/16 or 0.4375, the last three figures are dropped and 4/10-inch is used. This system, it is seen, permits of rapid mathematical calculations without introducing a method that is wholly foreign to us, but at the same time the need for its general adoption has never been felt.

Just as public opinion is the keynote in framing national laws for the common good of all, so will the opinion of those on whom will fall the burden of adopting the metric system influence the final verdict.

It is obvious that American manufacturers will not be forced to adopt a system if it leads to years of confusion unless compensating rewards are certain of obtainment. If manufacturers at large show a favorable disposition toward the metric system it will be legally adopted; otherwise a bill to make it standard will meet with defeat. The manufacturers themselves must decide.

## Short Shrift for Traitors

THE patriotic I. W. W. member does not salute the flag. He slows down production by practicing sabotage. He proves his loyalty by intelligent rebellion."

This was one of the striking paragraphs from the documentary evidence introduced in the trial of 100 leaders of the I. W. W., which resulted in their conviction on a charge of sedition recently in Federal Judge Landis' court in Chicago. The paragraph appeared in an article in *The Lumber Jack,* an I. W. W. organ, boasting that the I. W. W. had tied up the government's aviation program by strikes and sabotage in the lumber districts of the northwest. It summarized the attitude of the I. W. W. toward the government as shown by books, pamphlets and other documents authorized and issued by them.

That this literature had its effect was revealed by a pledge, read at the trial, which was adopted by Chattanooga members: "We do pledge ourselves further that in case we are forced by the state to take up arms we will desert, mutiny or in any other available way defeat the purpose of the force used against us and we will do our best to persuade others to the same acts." Similar resolutions were adopted by other sections of the organization, the Augusta, Ga., members in their resolutions branding American soldiers as "potential murderers."

The contempt with which the members regarded the government and the highest appeals to character and patriotism was shown by an article in *Solidarity* in which the writer expressed himself thus: "To miners Woodrow Wilson says, 'If you slacken or fail armies and statesmen are helpless.' Right you are, Woody; when the cat sits on the pick-handle brass buttons go to pot."

"Cat" is the nick-name applied by the members to those who practice sabotage.

One of these cats, Frank Wormke, testified at the trial that after participating in the I. W. W.'s reign of terror in the west in which he aided in destroying food, buildings and material by fire and explosives he joined the army. He confessed that the I. W. W. leaders had instructed him to practice sabotage in the army and urged him to poison the soldiers' food.

The evidence introduced at the trial forms one of the most sensational stories of murder, sabotage and rebellion ever heard in an American court. Was it any wonder that having listened to the evidence for 138 days the jury took just one hour to return a verdict of guilty against "Big Bill" Haywood and his gang?

## A Good Work Well Begun

APROPOS of the announcement of July's record-breaking ship-launching achievement, is the report on work being done by the government in an effort to afford adequate port facilities for America's rapidly growing merchant marine. Under the direction of the newly-created port and harbor facilities commission of the United States shipping board the first complete survey of port conditions in this country is now under way, and with the recent announcement of this fact, the results of a preliminary study of these conditions were also made public.

While commenting on overtaxed conditions of the larger eastern ports which largely is an old story, the results of the preliminary investigation in their relation to the nation's port and harbor facilities as a whole are enlightening. The report covers, in addition to the larger ocean terminals, conditions at a vast number of the smaller ports, which since the outbreak of hostilities have been of growing importance. It indicates clearly that much effort must be expended in this direction if the country's best interests are to be properly safeguarded, not only now, during the course of the war, but later when peace is finally declared and world trading is resumed. The investigation of the commission has established the fact, in this connection, that if maximum benefit is to be derived from the merchant marine, now in the making, the country's port facilities must be expanded two or three fold.

The commission in undertaking this work truly has a huge task ahead of it; however, this has in no way affected the thoroughness with which it now is carrying out its investigation. All the larger ports are being visited, and complete data, covering developments of the past five years relative to docks, repair plants, terminal arrangements, etc., are being requested of every port used for seagoing traffic in the country.

# Iron and Steel Prices

**Corrected to Wednesday Noon**

SCRAP, WAREHOUSE AND IRON ORE PRICES ON PAGE 474

## PIG IRON

| | |
|---|---|
| Bessemer, valley | $35.20 |
| Bessemer, Pittsburgh | $36.60 |
| Basic, Pittsburgh | 33.40 |
| Basic, eastern Pa. | 32.00 |
| Basic, Buffalo | 32.00 |
| Malleable, Pittsburgh | 34.90 |
| Malleable, Chicago | 33.50 |
| Malleable, Buffalo | 33.50 |

**GOVERNMENT SCHEDULE**

1.75 to 2.25 silicon (No. 2 foundry, No. 2 plain, and No. 3 southern), $33 furnace base.

2.25 to 2.75 silicon (No. 2X, No. 1 Northern foundry, and No. 2 southern), base plus 50c

2.75 to 3.25 silicon (No. 1X, No. 2, soft), base plus $1.50

Over 3.25 silicon, $34.50, plus $1.00 for each ½ per cent of silicon.

| | |
|---|---|
| No. 1X, Phila. | 35.25 to 35.50 |
| No. 2 foundry, Pittsburgh | 34.40 |
| No. 2 foundry, Cleveland | 33.00 |
| No. 2 foundry, Ironton | 33.00 |
| No. 1 foundry, Chicago | 33.50 |
| No. 2 foundry, Chicago | 33.00 |
| No. 2X foundry, Phila | 34.25 to 34.50 |
| No. 2X foundry, N. J. tide | 34.25 to 34.50 |
| No. 2X foundry, Buffalo | 33.50 |
| No. 2 plain, Philadelphia | 33.75 to 34.00 |
| No. 2 plain, N. J. tide | 33.75 to 34.00 |
| No. 2 southern Birmingham | 33.00 to 33.50 |
| No. 2 southern, Cincinnati | 37.10 |
| No. 2 southern, Chicago | 38.50 |
| No. 2 southern, Phila. | 40.10 |
| No. 2 southern, Cleveland | 38.50 |
| No. 2 southern, Boston | 41.00 |
| No. 2 southern, St. Louis | 39.75 |
| Virginia, No. 2X, furnace | 33.50 |
| Virginia, No. 2X, Phila. | 37.60 |
| Virginia, No. 2X, Jersey City | 37.90 |
| Virginia, No. 2X, Boston | 38.20 |
| Gray forge, Pittsburgh | 33.40 |
| Silveries, 8 per cent, furnace | 45.50 |
| Silveries, 8 per cent, Chicago | 48.50 |
| Low phos. standard, Phila. | 56.00 |
| Low phos. Lebanon, furnace | 50.00 to 52.00 |
| Low phos., Pittsburgh standard | 54.40 |
| Charcoal, Superior, Chicago | 37.70 to 38.00 |
| Charcoal, Superior, Buffalo | 37.50 |
| Charcoal, southern to 2 per cent silicon | 50.00 |

## COKE

(At the ovens)

| | |
|---|---|
| Connellsville furnace | $6.00 |
| Connellsville foundry | 7.00 |
| Pocahontas furnace | 8.00 |
| Pocahontas foundry | 8.00 |
| New River foundry | 8.00 |
| New River furnace | 8.00 |
| Wise county furnace | 7.25 |
| Wise county foundry | 8.25 |

## FERROALLOYS

| | |
|---|---|
| Ferromanganese, 70 per cent delivered | 250.00 |
| Spiegel, 16 per cent fur., spot | 75.00 |
| Spiegel, contracts, furnace | 75.00 |
| Ferrocarbon titanium, carloads, maker's plant | 200.00 |
| Ferrosilicon, 50 per cent, third quarter, Pitts. | 155.00 to 165.00 |
| Ferrosilicon, 50 per cent, Pitts., remainder of 1918 | 155.00 to 165.00 |
| Bessemer ferrosilicon, 10 per cent | 55.00 |
| Bessemer ferrosilicon, 11 per cent | 58.30 |
| Bessemer ferrosilicon, 12 per cent | 61.60 |

Ferrosilicon prices at Ashland, Ky., Jackson and New Straitsville, O.

## SEMIFINISHED MATERIAL

**BILLETS AND BLOOMS**

| | |
|---|---|
| Open-hearth, Pittsburgh | $47.50 |
| Open-hearth, Philadelphia | 51.30 |
| Open-hearth, Youngstown | 47.50 |
| Bessemer, Pittsburgh | 47.50 |
| Bessemer, Youngstown | 47.50 |
| Forging, Pittsburgh | 60.00 |
| Forging, Philadelphia | 63.80 |

**SHEET BARS**

| | |
|---|---|
| Open-hearth, Pittsburgh | $51.00 |
| Open-hearth, Youngstown | 51.00 |
| Bessemer, Pittsburgh | 51.00 |
| Bessemer, Youngstown | 51.00 |

**SLABS**

| | |
|---|---|
| Pittsburgh and Youngstown | $50.00 |

**WIRE RODS AND SKELP**

| | |
|---|---|
| Wire rods, Pittsburgh | $57.00 |
| Grooved skelp, Pittsburgh | 2.90c |
| Sheared skelp, Pittsburgh | 3.25c |

## SHAPES, PLATES AND BARS

(In cents per pound)

| | |
|---|---|
| Structural shapes, Pitts. | 3.00c |
| Structural shapes, Phila. | 3.23c |
| Structural shapes, N. Y. | 3.245c |
| Structural shapes, Chgo. | 3.27c |
| Tank plates, Chicago | 3.52c |
| Tank plates, Pittsburgh | 3.25c |
| Tank plates, Philadelphia | 3.48c |
| Tank plates, New York | 3.495c |
| Bars, soft steel, Pittsburgh | 2.90c |
| Bars, soft steel, Chicago | 3.17c |
| Bars, soft steel, New York | 3.145c |
| Bars, soft steel, Phila. | 3.13c |
| Bar iron, Phila. | 3.73c |
| Bar iron, Chicago | 3.50c |
| Bar iron, Cleveland | 3.67c |
| Bar iron, New York | 3.745c |
| Bar iron, Pittsburgh | 3.50c |
| Hard steel bars, Chicago | 3.00c |

## RAILS, TRACK MATERIAL

| | |
|---|---|
| Angle bars, Pittsburgh base | 3.25c |
| Angle bars, Chicago base | 3.25c |
| Standard bessemer rails, mill | $55.00 |
| Stand. open-hearth rails, mill | $7.00 |
| Light rails, 25 to 45, mill | 3.00c |
| Relaying rails, light, St. L. | 60.00 to 67.00 |
| Spikes, railroad, Pitts. | 3.90c |
| Track bolts, Pittsburgh | 4.90c |
| Track bolts, Chicago | 5.115c |
| Tie plates, Chicago | 3.25c |

## WIRE PRODUCTS

(Per 100 lbs to jobbers; retailers 5c more)

| | |
|---|---|
| Wire nails, Pittsburgh | $3.50 |
| Coated nails, Pittsburgh | 3.45 |
| Plain wire, Pittsburgh | 3.25 |
| Galvanized wire, Pittsburgh | 3.95 |
| Polished staples, Pittsburgh | 3.65 |
| Galvanized staples, Pbgh. | 4.35 |
| Barb wire, painted, Pitts. | 3.65 |
| Barb wire, galvanized, Pitts. | 4.35 |
| Cut nails, Pittsburgh | 4.00 |

## CHAIN, PILING, STRIP STEEL

(In cents per pound)

Chain, 1 in. proof coil, Pitts. 7.50c

Sheet piling, base, Pitts. 4.00c to 5.00c

Cold rolled strip steel hard coils, 1½ inches and wider by 0.100 inch and heavier, base per 100 pounds, 6.50c.

## Market Report Index


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## SHEETS

(In cents per pound)

**SHEET MILL BLACK**

| | |
|---|---|
| No. 28, open-hearth, Pitts. | 5.00c |
| No. 28, bessemer, Pitts. | 5.00c |
| No. 28, open-hearth, Chi. | 5.27c |

**TIN MILL BLACK**

| | |
|---|---|
| No. 28, open-hearth, Pitts. | 5.00c |
| No. 28, bessemer, Pitts. | 5.00c |

**GALVANIZED**

| | |
|---|---|
| No. 28, open-hearth, Pitts. | 6.25c |
| No. 28, bessemer, Pitts. | 6.25c |
| No. 28, open-hearth, Chi. | 6.52c |

**BLUE ANNEALED**

| | |
|---|---|
| No. 10, open-hearth, Pitts. | 4.25c |
| No. 10, bessemer, Pitts. | 4.25c |
| No. 10, open-hearth, Chi. | 4.52c |
| No. 10, open-hearth, Phila. | 4.48c |

## TIN PLATE

(Per 100 lb. box)

Tin plate, coke base, Pitts. $7.75

## IRON AND STEEL PIPE

Base Pittsburgh

| Base, Pittsburgh | Black Per cent off | Galv. Per cent off |
|---|---|---|
| ¼ to 3 in., butt, steel | 51 | 37½ |
| ¼ to 3 in., butt, iron | 33 | 17 |

## BOILER TUBES

| | |
|---|---|
| Steel, 3½ to 4½ inches, l. c. l. | 30 |
| Iron, 3½ to 4½ inches, c. l. | 12½ |

## CAST IRON WATER PIPE

Without War Freight Tax

(Class B Pipe)

Class A pipe is $1 higher than Class B.

| | |
|---|---|
| Four-inch, Chicago | 64.80 |
| Six-inch and over, Chicago | 61.80 |
| Four-inch, New York | 65.70 |
| Six-inch and over, N. Y. | 62.70 |
| Four-inch, Birmingham | 58.00 |
| Six-in. and over, Birmingham | 55.00 |

## HOOPS, BANDS, SHAFTING

| | |
|---|---|
| Hoops, Pittsburgh | 3.50c |
| Bands, Pittsburgh | 3.50c |
| Hot rolled strip steel, Pitts. | 3.50c |
| Hot rolled strip steel, Pitts. stamping quality | 4.00c |
| Shafting, Pitts., carloads | 17 off to list |
| Cotton ties, Aug., per bundle | $1.94 |

## RIVETS

| | |
|---|---|
| Structural rivets, Pittsburgh | 4.40c |
| Boiler rivets, Pittsburgh | 4.50c |
| Rivets ⅞ in. & small., Pitts. | 50 and 10 off |

## NUTS AND BOLTS

(Delivered within 20-cent freight radius)

**CARRIAGE BOLTS**

(⅜ x 6 inches, smaller and shorter)

| | |
|---|---|
| Rolled thread | 50–5 off |
| Cut thread | 40–10–5 off |
| Larger and longer | 40 off |

**MACHINE BOLTS**

(⅜ x 4 inches, hot pressed nuts)

| | |
|---|---|
| Rolled thread | 50–10–5 off |
| Cut thread | 50–5 off |
| Larger and longer | 40–10 off |
| Cold pressed semifinished hexagon nuts ⅝ in. and larger | 60–10–10 off |
| Cold pressed semifinished hexagon nuts ⅞ in. and smaller | 70–5 off |
| Gimlet and cone point lag screws | 50–10 off |

**NUTS**

| | |
|---|---|
| Hot pressed, square blank | 2.50c off |
| Hot pressed, square tapped | 2.30c off |
| Hot pressed, hexagon blank | 2.30c off |
| Hot pressed, hexagon tapped | 2.10c off |
| Cold pressed, square blank | 2.25c off |
| Cold pressed, square tapped | 2.00c off |
| Cold pressed, hexagon blank | 2.25c off |
| Cold pressed, hexagon tapped | 2.00c off |

## Prices Present and Past

(Yesterday, a month ago, three months ago and a year ago)

Quotation on leading products August 21, average for July, 1918, average for May ,1918, and average for August, 1917. Prices are those ruling in the largest percentage of sales at the dates named.

| | Prices Aug. 21, 1918 | Average prices July, 1918 | May, 1918 | Aug., 1917 |
|---|---|---|---|---|
| Bessemer pig iron, Pittsburgh | $36.60 | $36.60 | $36.15 | $55.55 |
| Basic pig iron, Pittsburgh | 33.40 | 33.40 | 32.95 | 52.75 |
| *No. 2 Foundry pig iron, Pitts. | 34.40 | 34.40 | 33.95 | 55.55 |
| *No. 2, Foundry pig iron, Chi. | 33.00 | 33.00 | 33.00 | 55.00 |
| Lake Superior charcoal, Chicago | 37.70 | 37.70 | 37.50 | 59.50 |
| Malleable, valley | 33.50 | 34.90 | 34.45 | 55.55 |
| Malleable, Chicago | 33.50 | 33.50 | 33.50 | 55.00 |
| **Southern, No. 2, Birmingham. | 33.50 | 33.50 | 33.50 | 48.00 |
| *Southern Ohio No. 2, Ironton | 33.00 | 33.00 | 33.00 | 55.00 |
| Basic, eastern Pa. | 32.00 | 32.00 | 32.00 | 51.00 |
| **No. 2X Virginia, furnace | 33.50 | 33.50 | 33.50 | 51.90 |
| **No. 2X foundry, Philadelphia | 34.50 | 34.50 | 34.25 | 53.40 |
| Ferromanganese, 70%, delivered | 250.00 | 250.00 | 250.00 | 375.00 |
| Bessemer billets, Pittsburgh | 47.50 | 47.50 | 47.50 | 93.00 |
| Bessemer sheet bars, Pittsburgh | 51.00 | 51.00 | 51.00 | 96.00 |
| Open-hearth sheet bars, Pitts. | 51.00 | 51.00 | 51.00 | 96.00 |
| Open-hearth billets, Pitts. | 47.50 | 47.50 | 47.50 | 93.00 |
| Steel bars, Pittsburgh | 2.90 | 2.90 | 2.90 | 4.00 |
| Steel bars, Chicago | 3.17 | 3.17 | 2.90 | 4.50 |
| Iron bars, Philadelphia | 3.73 | 3.73 | 3.50 | 4.92 |

| | Prices Aug. 21, 1918 | Average prices July, 1918 | May, 1918 | Aug., 1917 |
|---|---|---|---|---|
| Iron bars, Cleveland | $3.64 | 3.64 | 3.64 | 4.75 |
| Iron bars, Chicago mill | 3.50 | 3.50 | 3.50 | 4.50 |
| Beams, Chicago | 3.27 | 3.27 | 3.00 | 5.88 |
| Beams, Pittsburgh | 3.00 | 3.00 | 3.00 | 4.50 |
| Beams, Philadelphia | 3.23 | 3.23 | 3.18 | 4.92 |
| Tank plates, Pittsburgh | 3.25 | 3.25 | 3.25 | 8.80 |
| Tank plates, Chicago | 3.52 | 3.52 | 3.25 | 9.64 |
| Tank plates, Philadelphia | 3.48 | 3.48 | 3.43 | 10.17 |
| Sheets, blk., No. 28, Pitts. | 5.00 | 5.00 | 5.00 | 9.00 |
| Sheets, blue anld., No. 10, Pitts. | 4.25 | 4.25 | 4.25 | 8.50 |
| Sheets, galv., No. 28, Pitts. | 6.25 | 6.25 | 6.25 | 10.25 |
| Wire nails, Pittsburgh | 3.50 | 3.50 | 3.50 | 4.00 |
| Connellsville furnace coke | 6.00 | 6.00 | 6.00 | 10.00 |
| Connellsville foundry coke | 7.00 | 7.00 | 7.00 | 12.70 |
| Heavy melting steel, Pitts. | 29.00 | 29.00 | 29.00 | 34.60 |
| Heavy melting steel, eastern Pa. | 28.50 | 28.50 | 28.50 | 32.80 |
| Heavy melting steel, Chicago | 29.00 | 29.00 | 28.90 | 35.50 |
| No. 1 wrought, eastern Pa. | 34.00 | 34.00 | 34.00 | 46.24 |
| No. 1 wrought, Chicago | 33.50 | 33.50 | 33.50 | 49.28 |
| Rerolling rails, Chicago | 34.00 | 34.00 | 34.00 | 46.25 |

*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.

(For Additional Prices See Page 474)

# Pig Iron Sales For 1919 Taper Off

### Buying Movement Seems to Have Spent Itself Due to Uncertainties Regarding Deliveries—Very Little Unallocated Iron Being Booked—Steel-Making Grades in Great Demand—Shipments Are Heavy

Cleveland, Aug. 20.—Sharp curtailment in the tonnage of pig iron distributed under federal sanction marked the past week. Total allocations during that period by the committee on pig iron, iron ore and lake transportation were only 41,500 tons against the record total of 166,000 tons in the previous week. The total amount distributed since May 1 is now 754,500 tons. Steel-making grades again led all others, more than half of the total being basic. The figures for the week by grades are: Basic 22,000 tons; bessemer, 10,000 tons; foundry, 7500 tons; malleable, 1500 tons; low phosphorus and silveries, 500 tons. Requests for iron continue to reach the committee in large numbers. Some selling, mostly for next year's delivery, is being done subject to the customary restrictions. The new form for use by producers in submitting to the committee monthly reports on production and shipments are now being distributed. The reports require more complete data. They are to be used after Sept. 1, the first report to be filled in and returned by Sept. 10.

#### Southern Iron Going to New England

Boston, Aug. 19.—Considerable southern iron is being shipped into Boston now that traffic delays have been cleared up. This iron goes all over New England, but, of course, is limited to war work. Most of it is taken by the Emergency Fleet corporation, the war and navy and ordnance departments. There are scores of concerns all over this section who may not be able to do business in a few months because of the nonreceipt of iron. The stove business, in particular, is in danger of being disrupted. An arangement may be made whereby certain stove concerns will be allowed to turn out stoves to supply the trade in a limited way, but there is said to be no hope of unrestricted production.

#### 1919 Selling Discontinued

New York, Aug. 19.—Selling of foundry pig iron for delivery over the first half of 1919 practically has come to an end. All of the furnaces who were selling for this position, have withdrawn and it is believed the only sales for first half which now are being made involve an occasional tonnage for a regular customer. Government orders continue to be placed in considerable volume, so that furnaces which expected to have some tonnage available for sale for shipment to their customers this year, are prevented from following such a policy by the steady stream of allocations. New allocations in many cases are coming in at a rate about equal to production.

#### Filling War Orders

Buffalo, Aug. 20.—Inquiry for pig iron in the Buffalo district continues strong. Producers are fairly besieged with requests from consumers all over the country for almost every grade of iron. Foundry, basic and malleable is most in demand. The answer returned by one producer who received heavy inquiries during the past week was that he will do business only with allocations. This particular interest, in addition, is sold up until

the end of the year tight, and could do nothing except on 1919 business. The attitude is taken that if the government desires to displace its own war orders, well and good, the new order will be filled immediately; but unless the allocators choose to recognize any particular order in this way, the war orders will be filled in their legitimate sequence.

### New Stack In Soon

Chicago, Aug. 20.—It is expected the new blast furnace stack of the Steel & Tube Co. of America at Indiana Harbor will be blown in next week, which will release considerable tonnage of merchant pig iron formerly furnished for steelmaking purposes by a furnace at South Chicago. This will improve deliveries of merchant iron, but as contracts already have been made against this added tonnage it will not furnish opportunity for further buying. Efforts of producers are now being centered on maximum production and careful distribution according to the government's most pressing needs. So well is this being done that no instances are known of melters being forced to close down for lack of iron. Contracting for pig iron for delivery during first half of 1919 is on a small scale, only the requirements of regular customers engaged on essential work being considered and tonnages are not booked in excess of the ordinary purchases of the past. Most of these contracts are for small lots, as the majority of melters are not betraying much interest in next year's supply. Allocation of first half production has been completed by some Lake Superior charcoal iron producers and melters have been notified of the tonnages reserved for them. In most cases this is smaller than the recipients had expected, but the distribution was made on the most equitable basis possible. Southern iron is practically out of the market and producers in that district are far behind on deliveries with little chance for further selling for some time. Buying of silvery iron is almost impossible as the make for 1918 is already covered and producers will not entertain inquiries for 1919 delivery. An occasional car of high sulphur silvery comes to this market and is disposed of readily.

### Auto Shift Affects Foundries

Cincinnati, Aug. 20.—A more careful distribution of charcoal iron is reported. Furnaces making foundry iron are also asked to see that iron goes to melters who have important work in hand. It is said the reduction in the manufacture of automobiles will probably reduce the melt in some foundries so that they will have to seek work of a more essential nature. There is more inquiry for foundry iron to be shipped in the first half of next year, and these inquiries are almost invariably turned down because producers do not wish to commit themselves that far ahead. A few sales have been made, and it is not beyond the bounds of reason to state that favored customers might be taken care of for the delivery mentioned. No open sales of consequence can be noted.

### Nearing Last Lines of Defense

St. Louis, Aug. 20.—Prospects for obtaining pig iron by plants in this district working on nonessentials appear more remote than at the beginning of this month. Enterprising heads of several of the plants affected have spent the past two weeks in canvassing every available source of supply in the north, south and east, but have gained absolutely nothing for their pains. Producers uniformly state they have sold well into 1919, and do not expect to have any surplus over and above their engagements. Some few express the belief that they may have something to sell after the first of the year, but can promise nothing definite, and are unwilling to book any orders. Such a thing as iron for spot delivery, or shipment during the next two or three months is unheard of. The pinch continues to grow daily more acute, meantime, and the demand is described as colossal. Stove manufacturers and other makers of specialties outside the essential category are rapidly nearing their last lines of defense. Their campaigns against the scrap redoubts have resulted in a pretty thorough cleaning up of all material suitable for their needs, and the scrap situation in the near future will not be much better than pig iron. During the past three weeks government control and supervision of the southern districts has progressively tightened, so that they are now in about the same position as the north and east in this respect.

### Government Control Is Felt In South

Birmingham, Ala., Aug. 20.—Pig iron producers in the South feel the effects of government control or to put it right, the manufacturers of pig iron in the southern territory are rigidly carrying out the wishes of the government in all their dealings. Allocation of an order for 1000 tons of basic iron to be shipped to Italy is reported, the Sloss-Sheffield Steel & Iron Co. taking the order. The Alabama Co., Sloss-Sheffild and the Woodward Iron Co. are working diligently on the 100,000 tons of basic iron allocated to this district a few weeks ago for the British. Inquiries are still being received for iron for 1919 delivery. Report has it that more than 50,000 tons in orders for delivery during the first half of the coming year had to be declined, though the consumers had declared their operations of an essential nature. Stocks on hand have been reduced to 110,000 tons of which upwards of 50,000 tons are basic iron and belong to the Steel corporation. The yards are almost as lean as they ever were. Railroad service is a little better but the government's business has caused further delays on old contracts. Production shows no improvement and unless there is a change before the end of the month, the output at blast furnaces in Alabama will hardly be much greater for August than it was in July.

### Few 1919 Sales

Philadelphia, Aug. 20.—Western Pennsylvania furnaces which were selling iron for first half delivery have withdrawn from the market except on occasional tonnages on which offers were previously made. These interests sold heavily and accounted for practically all of their first half output. Eastern furnaces participated in first half selling to only a limited extent. There is a possibility that one or two more eastern furnaces may be switched from foundry to basic. The outlook for foundry iron is less satisfactory. Another Alabama furnace was changed recently from foundry to basic. Allocations of foundry iron in numerous cases are fully equal to the shipments and if this keeps on very little selling is expected. There are indications from recent developments that iron will be allocated without regard to the extent to which furnaces are sold up. Several eastern furnaces are down for repairs and on account of labor difficulties.

### No Increase in Production

Pittsburgh, Aug. 20.—Cooler weather during the past week has brought about no material recovery from the recent decline in pig iron production resulting from the excessive heat. Labor is said to have lagged and a shortage of cars extending over several days prevented some makers from getting a full supply of coke. Inquiries for iron for first half of next year continue to be made freely, but furnaces are not making any additional contracts. There is still a marked scarcity of both steelmaking and foundry iron and lately the shortage of bessemer appears to have be-

come more acute. It is understood that only four merchant furnaces in this district now are making bessemer iron and that a large portion of this tonnage is entering into the manufacture of ingot molds. Stovemakers are making strong but futile efforts to secure iron. This industry has no classification and until its status is defined by the war industries board furnace interests are declining to ship.

## Pipe Mills Are Filled

Pittsburgh, Aug. 20.—Makers of iron and steel pipe are heavily committed on direct and indirect government work and are replacing stocks of jobbers, but are limiting the tonnages for the latter to their minimum requirements. Production was affected considerably by the heat, particularly in the case of iron pipe, but cooler weather having set in, it is being increased somewhat.

### Need Pipe for Arsenal

Chicago, Aug. 20.—Inquiry for approximately 1000 tons of extra heavy cast-iron pipe by the United States government for use at the Rock Island arsenal is the only feature in the market for this product in the west. Bids were taken Aug. 17 but no decision has been made on placing the tonnage. Further demand is slack and only small lots of routine business are being handled.

### Government Buying

New York, Aug. 19.—Buying cast-iron pipe in the east is virtually unchanged in volume, with the government placing the bulk of current business. Makers still are having considerable difficulty in obtaining sufficient supplies of raw material, but are hopeful that the government, in keeping with recent assurances, will soon afford relief. Prices remain firm at the government maximum levels.

### Pipe Making Further Reduced

Birmingham, Ala., Aug. 20.—Very little is being done in the way of cast-iron pipe production, as compared to the former activities along this line in the Birmingham district. Plants are working well, however, but on shells and other work. Pipe making has not ceased altogether, a few orders being in hand; and the government is still receiving some of the product from this district. A little soil pipe is also being made.

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The Emporium Iron Co., Emporium, Pa., blew out its furnace Aug. 10 for relining.

# Coke Supply Holds Up Well

**Reports From Connellsville Are Encouraging—Eastern Supply Augmented—Southern By-Product Ovens Progressing**

Pittsburgh, Aug. 20.—Owing to the cooler weather, production of coke in the Connellsville region increased during the past week. Some furnaces have reported a shortage of fuel as a result of the curtailment of output and a slight falling off in the car supply for the preceding week, but the movement again is practically normal and it is only in isolated cases that lack of coke now is reported. Aside from infrequent offerings of foundry coke, no free tonnage is available, the production being absorbed by contracts. When any surplus does appear it is allocated by the fuel administration. The administration also has been diverting good sized tonnages from regular consumers who have contracts to others who were short of fuel. Production for the week ending Aug. 10 totaled 319,010 tons as compared with 340,980 tons for the preceding week, according to *The Connellsville Courier*.

### Coke Being Stocked

Boston, Aug. 19.—Warnings have had a good effect in the coke situation The tendency now is for stocking up to meet the emergency of winter. The coke interests have sent out scores of letters to firms that asked for delayed shipments and have even interviewed the heads of these firms, explaining the danger of a delaying policy. Letters are being received every day with instructions to send shipments along, stating that space would be found.

### East Gets Larger Supply

New York, Aug. 19.—Of great significance to eastern blast furnaces is the announcement by the Debevoise-Anderson Co., New York, sales agents of the Seaboard By-Product Coke Co., of the extension of the latter's plant on the Hackensack river at Seaboard, N. J. Practically all of the eastern blast furnaces during the past year or two have come to depend more and more on this producer for a portion of their coke supply. The cost of the by-product coke to the eastern furnaces is $1.70 more per ton than Connellsville coke, but the difference is gladly paid owing to the lack of sufficient Connellsville coke to go around. As a rule, the by-product coke is mixed with coke from the Connellsville district, thus eking out the coke tonnage. The extension to the Seaboard plant comprises 55 new ovens and is scheduled for completion by the end of the year.

### Quiet Buying of Foundry Coke

Cincinnati, Aug. 19.—From the Connellsville district there are much more encouraging reports than were anticipated. A remarkable statement from one coke producer is that over 85 per cent capacity was maintained during the extremely hot weather that recently prevailed. This was not the case with the majority of ovens, but taking everything into consideration, the hot spell was one that did not cause as much slowing down in operations as was expected.

### Some Surplus In St. Louis

St. Louis, Aug. 20.—There has been a fair increase in production by by-product plants in this district and the surrounding region, despite the intensely hot weather. A slight improvement in the labor situation and satisfactory coal deliveries have been the leading factors in the increase. Small surplus tonnages have developed, which, however, were absorbed immediately upon announcement of their existence. Leading melters here, especially those doing war work, are making no complaint on the score of deliveries of foundry coke from the Connellsville and Virginia fields, though the efficiency since Aug. 1 is not on a parity with the July showing.

### Coke Production Almost Stationary

Birmingham, Ala., Aug. 20.—The coke production in Alabama is almost stationary. The make is about near the maximum with the available ovens. Considerable progress is announced on the 154 additional by-product ovens at the big Fairfield plant of the Tennessee Coal, Iron & Railroad Co., while contracts are being let for the Sloss-Sheffield Steel & Iron Co.'s 120 Semet-Solvay by-product ovens and the Birmingham Coke & By-Product Co.'s 50 Koppers ovens. A little coke is still being shipped from this district to Mexico and also to the extreme western part of this country. The coal supply of the district shows a little improvement, the official figures of the representative of the federal fuel administrator giving the tonnage for the week ending Aug. 10 at 427,718 tons against 417,462 tons for the week ending Aug. 3.

# Scrap Situation is Easier

## In East and South Available Supplies Show Improvement But Heavy Melting Grades Are Short

FOR COMPLETE SCRAP PRICES SEE PAGE 474

Pittsburgh, Aug. 20.—Demand for heavy shell turnings for open-hearth consumption is more active but comparatively small tonnages are available. Some blast furnace interests who have been using this grade rather freely, now are showing less inclination to take such material owing to its high cost, the maximum price being $24 plus the commission. One sale of this grade involved between 5000 and 6000 tons for delivery over the remainder of the year, the transaction being made through a broker who sells the output of a large shell-making plant in this district. Blast-furnace interest say they will not be disturbed much as a recommendation of the American Iron and Steel institute that for a period of 30 days, beginning Monday, Aug. 19, no iron or steel turnings be shipped to blast furnaces, except certain ones making low-phosphorus pig iron. The ruling, it is believed here, will be successful in aiding rolling mills in getting greater tonnages for making bar iron, although the help in this direction is not expected to be so great as it will be in supplying greater quantities of old material for open-hearth use. Most consumers in this district are short of old material and are unable to cover their requirements adequately. Dealers report that they are unable to get tonnages and some yards have on hand only a small fraction of the stocks they had one year ago. Others have practically the same quantity as they had at that time, but are now beginning to draw heavily on their stocks and do not see any chance of making replenishments. With leading grades of scrap extremely scarce, open-hearth consumers are turning to any grades they can get. This has been especially noticeable in the increased demand for stove plate which is being bought whenever available at the maximum price of $29, as compared with the previous quotation of $26.50 to $27. One consumer in this district recently bought 2000 tons of this grade at the maximum level.

### Enough Scrap for Present

New York, Aug. 19.—While some dealers are complaining of a marked shortage in several grades of scrap in this district, it nevertheless appears that there are sufficient supplies to meet the demand. Cast scrap, as a result of continued good inquiry, is perhaps the least plentiful, yet there seems to be enough of this material to cope with present requirements. The embargo on all shipments of turnings to blast furnaces, excepting those producing low-phosphorus iron, went into effect today, for a period of about a month. This action is expected to bring relief to rolling mills and open-hearth steel plants, whose more exacting requirements have made it difficult for them to compete with blast furnaces in the purchase of material. At the present time, supplies of turnings in this district, and also low-phosphorus scrap, appear in better volume than the majority of other descriptions.

### Think There Are Enough Turnings

Buffalo, Aug. 20.—The order making it prohibitory for turnings of any character to be shipped to blast furnaces does not affect furnaces in this district. There are, in this district no blast furnaces that have been using wrought iron and steel turnings. At the same time the order is interesting here and has caused considerable comment. Considering the tremendous output of shell turnings and ordinary machine shop turnings at the present time the order has been received with astonishment in Buffalo. It has been known for some time that blast furnaces particularly in Youngstown and Pittsburgh have been finding it particularly difficult to buy machine shop turnings at the government price of $19 plus commission. Large tonnages of so-called shovelling machine shop turnings have been freely offered and it is understood have been sold above the government price of $19. There is no government classification that would permit ordinary shovelling turnings to be sold above the $19 figure except for chemical purposes, and purchases of shovelling machine shop turnings are not being made by chemical users of this district at the present time. Consumers feel that if there is any violation by dealers or producers, action should be taken. Consumers feel that enough turnings are being produced at the present time to satisfy the requirements of both blast furnaces and open-hearth furnaces.

### Cleveland Scrap Quiet

Cleveland, Aug. 20.—With most local melters of heavy melting steel fairly well covered for the present, little activity appears in the Cleveland market. The trade generally is taking it easy and the vacation season is in full swing. Demand for most grades of material is merely nominal. The turnings decision recently announced by Judge Gary does not appear to have made much difference in this district since blast furnaces have not been using much of this material in the past year. Stove plate and similar grades of material are in less demand of late. But prices generally are holding about level.

### Shortage Still Marked

Chicago, Aug. 20.—Lack of scrap to fill orders and provide material for consumers continues to make the volume of business in this material unusually short. Most consumers of heavy grade steel are in the market and while no distress has been observed there is much less tonnage than the market demands. The same is true of other grades used in the open-hearth. Rolling mill grades are in slightly beter demand but this form of scrap is not as strong as others. Railroad offerings are small, the only tonnage available at present being 500 tons offered by the Chicago Great Western railroad.

### Stove Plate and Borings Weak

Cincinnati, Aug. 20.—Scrap of all kinds is growing very much scarcer. The word of the dealer may not be taken for this entirely, and the rush of foundrymen to make contracts for their future needs is sufficient to tell the story. No comment need be made on the demand from the rolling mills. Stove plate is one grade of foundry scrap that is not strong, and cast-iron borings are also not holding their own. All other kinds of scrap are very strong.

### Consumers Shy of High Prices

St. Louis, Aug. 17.—The market for scrap is in an unsatisfactory state from the dealer's viewpoint. The demand is enormous and general, but scrap of all grades and descriptions is scarce and expensive, and many of the important consumers are unwilling to meet quotations, especially where they are plus commission. Yard stocks are not heavy, and there has

been a constant drain upon them, with inability on the part of dealers to replace the material going out. At points of origin owners of old iron and steel value it as they would so much precious metal, and are independent when it comes to selling. The fact is, the terrtiory has been scraped bare of everything in the discard, and the general economy and need for conservation is materially cutting down further scrap supplies.

### Mills Now Get Turnings

Philadelphia, Aug. 20.—As a result of the 30-day embargo on the shipment of turnings to blast furnaces, rolling mills have been able to buy large quantities and present indications are that the embargo will successfully achieve the purpose for which it was intended. Sales of turnings to mills during the past week have aggregated many thousands of tons. Some mills hope to accumulate tonnages for future use. Some applications for exceptions to the embargo are being made by dealers, but so far only small tonnages of turnings unsuitable for mill use have been involved. Sales of turnings feature the market, but demand for all grades of scrap is sufficient to take up all of the material available. The scrap subcommittees of the institute is still receiving protests stating that dealers are continuing the practice of picking choice scrap out of heavy steel for sale as unguaranteed low phosphorus scrap. Letters have been sent out by the American Board of Scrap Iron Dealers requesting dealers to refrain from this practice.

### Improvement Noted in the South

Birmingham, Ala., Aug. 20.—A change for the better is noted in the scrap iron and steel market in the south and dealers are laying in some stock and are selling more freely. Local consumers are still maintaining their own price though they have willingly given a little advance. Correspondence pending with northern and eastern centers promises to result in some business being booked in the next few days and shipments of scrap started from this section. Quotations have been marked up on many products. One of the larger home consumers of heavy melting steel was in the market last week offering from 50 cents to $1.50 per ton more for a large tonnage contract than for a few hundred tons. The dealers were not willing to sell to the full amount desired by the consumer. The belief is that the improvement will continue until a desired mark has been reached.

# Steel For 3-Inch Shells

## Needed by Government May Result in Decreased Sheet Bar Output—Bessemer Steel Supply is Short

Youngstown, O., Aug. 21.—Indications are that shell steel makers throughout the country have been requested to speed up production of 3-inch shell bars. Makers here are well booked with all sizes of shell steel and since there has been no special order from the government for makers here to specialize on 3-inch stock entirely, the mills are rolling at a steady pace on all sizes. However, one maker is about to convert a 10-inch finishing mill over for rolling 3-inch shell bars. This mill has been idle for the past month on account of a shortage of bessemer steel. Plans are already under way for the change and by altering the rolls, the maker expects to produce a 3-inch round in three passes which will meet specifications for the time being. If the plan meets with success, the mill will be used for shell making purposes until the termination of the war.

It is rumored a large wire producer in the Pittsburgh district is about to discontinue the making of wire at its Donora works and will alter the machinery so as to produce 3-inch shell rounds. It is further said that a sheet producer in Canton, O., will henceforth devote the entire production of his bar mill which at present is rolling sheet bars, to the making of shell bars. The reason for this is obvious since at both plants open-hearth steel is used instead of bessemer steel. The government no doubt will supply the latter plant with bessemer sheet bars from a nearby maker so that the open-hearth steel made at this plant can be used for shell-steel purposes.

One valley maker is of the opinion that before long few sheet bars will be made in this district. He bases his opinion on the fact that never in the history of valley steel-making has there been such a shortage of steel. A year ago a large percentage of his sheet-bar production was made from open-hearth material. Later, when shell-steel demands became more pressing, the open-hearth supply was entirely cut off and consequently all sheet bars were made from bessemer steel. The supply of the latter grade of steel was ample for a while but soon began to get scarce. Right now bessemer converters are only blowing 82 per cent of capacity which indicates an extreme shortage of pig iron. Nevertheless, nearly all the sheet bars which have been produced lately and are being made now at valley mills, have been allocated by the government. As pointed out, had it not been for government intervention, the making of even bessemer sheet bars would have been discontinued long ago by makers who dispose of them to outside sheet producers. The whole matter hinges on the government's future shell-steel demands. If they increase beyond what they are now, and some makers are of the opinion that they will before long, then more open-hearth steel will have to be diverted for shell-making purposes, which means that more finishing mills will have to depend on the bessemer plant for their supply of steel and consequently, the sheet-bar production will be curtailed. Some makers believe this curtailment is not far distant, because the country can do without sheets for a while but must have shell steel and right now the need for the latter is exacting especially for the 3-inch size.

### Shortage Is Acute

Pittsburgh, Aug. 20.—Hope is entertained for increased production of semifinished steel, now that the intense heat which curtailed output has given way to cooler weather and more satisfactory working conditions. The demands of the government are so numerous, however, that the trade does not see how they are going to be met fully, but shipments are being met entirely in accordance with the regulations of the war industries board so that attention is being given altogether to direct and indirect war work. The point has been reached where the scarcity of bessemer steel has become as great as that of open-hearth steel, both grades being taken whenever available. Inquiries still come to makers for billets, sheet bars, skelp, and wire rods, but no new business is being accepted unless it is given a priority rating.

### Steel Shortage Cuts Output

Pittsburgh, Aug. 20.—Shortage of steel has curtailed the output of cold-rolled strip steel to about 65 per cent of capacity. Replacements of jobbers' stocks are being made in fair sized volume where orders are accompanied by priority certificates or affidavits showing that tonnages are to be applied to essential consumption.

# Bar Price Still Unsettled

### Concession of $5 a Ton to Implement Makers May Not be Granted—Conferences Being Held

Pittsburgh, Aug. 20.—According to reports in the trade here, the matter of making a concession of $5 a ton in the price of steel for the implement trade still is held in abeyance, although it is understood that some prominent makers have agreed to this reduction. It is evident that others are strongly opposed to it and feel that it cannot be made without a similar decrease being granted for all other consumers, including the government, the allies and the general public. Some makers do not accept as being sound, the plea said to have been made by the implement trade that the reduction should be made because Pittsburgh now has become the sole basing point and that there is a freight differential of $5.40 a ton on steel bars, representing the rate from Pittsburgh to Chicago. Other consumers, it is pointed out, could, with equal force, make a claim for concession in prices they take. Moreover, it is pointed out that the implement trade does not consume more than 1 per cent of the steel output of the country and hence it can give no reason on the ground of being a heavy consumer for a reduced price. Operations of merchant bar mills are estimated at about 65 per cent of capacity, the output being restricted by the shortage of steel which is being divered to plate and shell steel production. Makers of iron bars are engaged principally on government work and are understood to have been given some rather large orders during the past two weeks.

#### Affidavits Accompany Orders

Cleveland, Aug. 20.—Affidavits in connection with the observance of the circular outlining the revised priorities system, occupy the attention of bar manufacturers in this district. These affidavits are being received in great numbers to cover orders already placed, and even inter-company orders between departments are delivered with the affidavits of classification accompanying. Bar mills are loaded to capacity, as is evidenced by the fact that a 75-ton order for hard bars has been received with reluctance and booked only after being shuttled between several mills. This order was for prime war work.

#### May Not Shade Bars

Chicago, Aug. 20.—As time passes the impression gains strength that the reduction of $5 per ton on bars entering into the construction of agricultural implements will not be granted. Steel makers in this territory take the position that while they oppose favors to any one class of consumers, they have been perfectly willing to apply the new figure on all business shipped since July 1, if the war industries board finds the situation warrants special intervention. No information can be obtained from sales offices that the matter has been decided and apparently it is still in abeyance. The total tonnage used by agricultural implement makers is estimated at about 500,000 tons per year, although operations have been shortened in some respects recently, which may reduce this total for 1918. It is understood the reduction was to apply only on material actually going into implements and not for bars used in other forms of output from the same plants. Hard steel bars are difficult to obtain on account of continued shortage of old steel rails. Most of the present output goes to implement makers, bed manufacturers and similar consumers.

Booking of considerable bar iron for the manufacture of chains is an innovation in this market, brought about by the increased demand for iron chain for ships. Previously most iron chain was manufactured in the east and material for it naturally was obtained in the same section. Eastern makers apparently are filled up on this grade and western mills are now turning their attention that way. Export demand continues good, but regular customers are not asking as much as usual.

#### Shafting Demand Is Strong

Pittsburgh, Aug. 20.—Demand for the larger sizes of cold-rolled shafting is strong, the entire output being for direct and indirect government work. Operations are estimated at about 65 per cent of capacity with no indications that they can be increased, the shortage of steel apparently making this impossible. Demand for the smaller sizes is only moderate. Practically no demand for the smaller sizes is being made by makers of pleasure automobiles and in view of the curtailment in the output of this class of cars, no inquiries from this source are expected unless they come in scattering lots which may be wanted to round out inventories that automobile makers have on hand.

#### Hoops And Bands Unchanged

Pittsburgh, Aug. 20.—No change of importance has taken place during the past week in the market for hoops and bands. Demand has fallen off and some makers still are considerably deferred on shipments, and the reduction in output is thought to be brought about by the shortage of steel. Delay has been encountered in getting the 10-inch hoop mill at the MacDonald plant of the Carnegie Steel Co. at Youngstown, O., in operation, and it will not be put on until some time next month. This mill will have a capacity of 3500 tons monthly.

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## Warehouses Are Unable to Obtain Steel

Chicago, Aug. 20.—Iron and steel jobbers who hailed the announcement that mills could supply them tonnage for August equal to the average bought during the first six months of 1918 are finding that even this permission is not bringing material to their plants. The classification given them is B 4 and most mills have sufficient priorities in A or B 1 and 2 to take care of their output for several months. Under these circumstances, the opportunity for a warehouse man to obtain supplies is fairly remote. While August is nearly done and stocks from which sales must be met depleted the tonnage which warehouses can claim for September delivery is exceedingly small, even though mills could make prompt delivery. An impression among Pacific coast stores that warehouses in that section were to receive tonnages equal to half their purchases during the first six months has been dissipated by anouncement that warehouses in all sections of the country were to receive the same treatment.

#### Hope For Relief

Boston, Aug. 19.—The warehouses are looking for developments in the next week or 10 days by which they expect a change for the better in receipts of steel. The situation now is daily growing worse. Every day dozens of orders are turned down because there is no stock on hand to fill them. And many of these orders are from concerns doing important government work, such as the making of munitions and machinery. Protests have been made to Washington and there is strong feeling in the trade against so important a holding up of

government essentials. To correct the situation the government will be obliged to lift the restrictions and permit shipment of greater tonnage

### Nails Made from Shell Steel

Buffalo, Aug. 20.—Jobbers report an acute shortage of wire products and nails. Some manufacturers are using shell-quality steel for nails, which makes a good nail, but an expensive one. The one producer of nails in this district makes nails out of its own steel product and does not have to utilize shell steel. Stocks of jobbers are being depleted with the result that manufacturers, even some of those working on war orders are unable to secure their requirements from regular sources. These conditions have been brought about by assigning steel to more pressing war requirements. Very little relief, sales agencies say, appears probable during the remainder of the year.

## Mills Refuse Bolt Orders

Chicago, Aug. 20.—Demand for bolts and nuts is unusually heavy and mills have sufficient orders on books at present to prevent their undertaking further obligations except in some exceptional cases. Inquiry is being received from users in almost every line and those unable to place business with western mills are looking to the east for their supplies with indifferent success.

### Hull Rivets Are Placed

Philadelphia, Aug. 20. — Several thousand tons of hull rivets have been divided among eight makers by the Emergency Fleet corporation. These are for shipment to Hog island. Small tonnages of bar iron are being allocated principally for shipyards. Bar iron is easy to get and makers are soliciting business for 30 to 60 days delivery. Sales of shell discard bars are being made for 60 days delivery. The only other steel bar sales reported involve small lots of special machinery steel at 6.50c out of stock at eastern mill.

### Large Rivet Orders Received

Pittsburgh, Aug. 20.—Makers of nuts, bolts and rivets are receiving good sized orders in connection with direct and indirect government work, shipyards being especially heavy buyers. Some producers are able to supply replacements to jobbers which are considerably less than they are authorized to make by the war industries board, but are compelled to pare down shipments of this kind owing to their reduced output.

# Plates For Japanese Ships

**Shortly Will be Allocated—Some Now Being Rolled in Chicago—British Plates Rolled at Youngstown**

Philadelphia, Aug. 20.—Approximately 120,000 tons of ship plates are to be allocated shortly by the Emergency Fleet corporation for shipment to Japan to be used in building about 250,000 deadweight tons of shipping. This is new tonnage at the government price for plates and is in addition to plates called for by old high-priced orders recently released It is estimated the old high-priced orders still on the books aggregate 250,000 tons. Plate production at certain mills now averages 90 per cent of capacity. The 10 per cent loss in production is due to various temporary causes, including labor dilution. Locomotive plates now have first place on mill schedules and mills are rushing them out. Various tonnages continue to be allocated.

### Roll Plates for British

New York, Aug. 21.—Approximately 10,000 tons of ship plates are being allocated among the mills for the British. Part of this tonnage was placed with makers in the Youngstown district together with a small order approximating 5000 tons for the French. Most of the plates being furnished to Japan in accordance with the agreement between that country and the United States for the exchange of steel for ships, are made in the Chicago district. One maker alone is supplying 5000 tons monthly. The Standard Steel Car Co., Butler, Pa., has obtained from a nearby maker 5000 tons of plates which will be used for building cars of the hopper type.

### Shipbuilders Get Plates

Chicago, Aug. 20.—Although all classes of consumers of finished steel find themselves more or less short of material, western mills claim they are keeping fairly close to their obligations with shipbuilders and that such delays as they have met have not been material. During the past week some mills have found government allocations fairly heavy in the aggregate, while others, which received heavy allotments recently, have not been given so much during the past few days. Included in the recent lots is a preponderance of ship material.

### Shipments Are Heavy

Pittsburgh, Aug. 20.—Plates for cars ordered by the railroad administration are moving to the plants of builders in good volume, deliveries being well up to consumption. Plate shipments to the shipyards are reported to be so good that in some instances the builders have been able to accumulate small reserve stocks.

## Wire Production Off

Pittsburgh, Aug. 20.—The output of wire and wire products is falling off because of the scarcity of steel and the diversion of tonnages from wire mills to what are considered more essential needs. It is reported that the war industries board during the past weeks has ordered three makers of wire products in different sections of the country to increase shipments of ingots to plants making shell steel and plates. It has been estimated that the output of wire and wire products will not average more than 55 per cent, some of them operating at not more than 40 per cent of capacity. Jobbers have not fared particularly well in the matter of replacements this month because government requirements, both the American and allied, have taken such a large part of the production as to leave little for the stocks of jobbers. Manufacturers seem to have sufficient supplies to meet priority orders of the higher classifications, but have not been able to do much with other inquiries. An order is in sight for 1500 kegs of nails coming to a manufacturer in this district for stock; and an order for a similar lot accompanied by a priority was honored, but the former was not filled.

### Wire Rods to Italy

Youngstown, O., Aug. 21.—Demand for all grades of wire but more especially barbed wire among valley mills is heavy, the government taking most of the production. Sometime ago the Italians were heavy buyers of this material but lately their demands have diminished. It is understood they now have their mills in shape to make wire which accounts for their frequent orders for rods. It is rumored a large wiremaker in the Pittsburgh district has agreed to change his Donora plant over to a shell-steel plant and to discontinue making wire at this works until the termination of the war.

# Fabricators at Capacity

### July Heaviest Month of Year—Reports Show Contracts Called For 116½ Per Cent of Capacity

New York, Aug. 20.—During July, according to the Bridge Builders and Structural society, 116½ per cent of the entire capacity of the bridge and structural shops of the country was contracted for. This percentage is equivalent to 209,700 tons, the biggest showing since last December. Structural shops on the average now have enough work on their books to occupy them for seven months. This is due largely to the extent they fell behind their schedules in the first quarter. The greater portion of the tonnage booked during July was comprised of requirements of the Emergency Fleet corporation. Many of the tonnages reported for July previously had been distributed to the fabricating shops but the formal orders did not come until July. During the first six months of this year, 56 per cent of the entire capacity of the bridge and structural shops of the country was contracted for. This figure is equivalent to 604,800 tons. The comparative table showing percentages for each month during the past two years follows:

| Month | Per cent | Approx. tonnage |
|---|---|---|
| July, 1918 | 116½ | 209,700 |
| June | 56 | 100,800 |
| May | 60 | 108,000 |
| April | 64 | 115,200 |
| March | 47 | 84,600 |
| February | 55 | 99,900 |
| January | 53 | 95,400 |
| December, 1917 | 121 | 205,200 |
| November | 77 | 138,600 |
| October | 61½ | 110,700 |
| September | 29 | 52,200 |
| August | 38 | 68,400 |
| July | 41½ | 74,700 |
| June | 47½ | 85,500 |
| May | 56½ | 102,000 |
| April | 61 | 110,000 |
| March | 68 | 122,000 |
| February | 59 | 106,000 |
| January | 61½ | 119,000 |
| December, 1916 | 86 | 148,000 |
| November | 78 | 134,000 |
| October | 77 | 133,500 |
| September | 52½ | 99,400 |
| August | 64 | 112,600 |
| July | 47½ | 83,600 |
| June | 58 | 100,000 |
| May | 80 | 137,000 |

#### Large Lettings in July

New York, Aug. 19.—Selling of structural shapes to jobbers and fabricators has diminished in volume in this district during the past week. Most of these interests have been taken care of in the buying movement which was made possible by the new priority schedule. The best mill deliveries which now are available, range from two to three months or more ahead. Most of the business which at present is being taken by the mills, is comprised of allocated orders.

Structural lettings in this territory during the past week were comprised almost entirely of additional requirements in connection with the army supply base at South Brooklyn, involving 1250 tons, and 1200 tons for bridges for the Pennsylvania railroad. Orders for 20,000 tons for the proposed buildings of the Air Nitrates Corp., at Toledo and Cincinnati, have not yet been placed.

#### Deliveries Are Uncertain

Philadelphia, Aug. 20.—Eastern makers are booking plain shape orders for jobbers and fabricators but say the outlook for delivery is uncertain. Some shipments will be made but there is absolutely no assurance as to when the orders will be completed as higher authority orders may be allocated in many cases in greater volume than shipments.

#### Entirely on Government Work

Pittsburgh, Aug. 20.—Government demands on the fabricators are so heavy and insistent that they have no capacity for other work. Inquiries from commercial sources are numerous enough, but they do not get much attention. The government disapproves of all construction of nonessential character and not only is money scarce for such projects, but there also is the obstacle of priority to overcome in securing the steel. The bigger part of the current output of fabricated material is going to the shipyards, but there also is a fairly generous distribution of tonnages for government buildings, and extensions to machine shops and other plants turning out products essential to the success of the war program.

#### Burnt Skelp Sold

Cleveland, Aug. 20.—Mills are seeking to divert orders for shapes, due to the fact that they are loaded to capacity until the end of the year. Even government orders ranking as high as A-3 are received with reluctance. Some small tonnage of shapes from shell discards is being sold. The scarcity of steel for small structural shapes is shown by the sale during the past week of about 400 tons of burnt edge skelp for rerolling.

#### More Industrial Building

Chicago, Aug. 20.—Demand for structural shapes for railroads and for industrial additions seems to increase and the number of projects closed from week to week is larger. One noticeable factor is the demand by railroad companies for heavy turntables, necessitated at important division points to handle the heavier motive power units now being used. The largest tonnage placed in the west recently involves 900 tons for a mill building at Peru, Ill., for the Illinois Zinc Co. Bids are being taken on 2000 tons for a foundry at Hamilton, Ohio, for the Hooven-Owens-Rentschler Co.

#### CONTRACTS AWARDED

Mill buildings for the Illinois Zinc Co., at Peru, Ill., 900 tons, to the Decatur Bridge Company.

Coal handling bridge No. 3 for the D. M. & N. Railway Co., 318 tons, to the Illinois Steel Co.

Buildings for the Hawthorne plant, Western Electric Co., Chicago, 188 tons, to the American Bridge Co.

Turntables for the Chicago & Northwestern Railroad Co. at Cedar Rapids, Iowa, 185 tons, to the American Bridge Co.

Bridges for Pennsylvania railroad, 1200 tons, to independent fabricators.

Pier shed for New York Dock Co., Brooklyn, 500 tons, to McClintic-Marshall Co.

Three trucking bridges connecting warehouse and pier sheds at South Brooklyn army supply base, 750 tons to the Levering & Garrigues Co.

#### CONTRACTS PENDING

Power house for Baltimore Gas & Electric Co., Baltimore, 600 tons, bids being taken.

Extension to machine shop at Mare Island navy yard, 400 tons, bids to be opened Sept. 2.

Foundry building for the Hooven-Owens-Rentschler Co., Hamilton, O., 2000 tons.

# Ferrosilicon Sold

### In Pittsburgh District for 1919 Delivery—Manganese Quiet

Pittsburgh, Aug. 20.—Fair sized tonnages of 50 per cent and of 20 to 25 per cent ferrosilicon have been sold by an interst in this district to outside consumers for last half and first half shipment. The 50 per cent grade is said to have been sold at prices ranging from $155 to $165, delivered. One lot for shipment over the period mentioned involves 500 tons. Reports that this alloy is being sold at lower levels cannot be verified. Some consumers apparently are taking tonnages of from 20 to 25 per cent ferrosilicon in place of 11 to 12 per cent ferrosilicon and silveries, of which there is an extreme shortage. Sales of 70 per cent ferromanganese in this district appear to involve limited lots, a number of transactions showing an increase. One interest has made four sales which totaled only 250 tons for first quarter and first half delivery, and another sale involves about 125

tons for shipment to a Pittsburgh consumer, while a user in Kentucky has taken 500 tons for first half delivery. Only light lots of 16 per cent spiegeleisen have been sold recently, the market for this alloy being $75, furnace, for both spot and contract tonnages.

### Consumers Close Contracts

New York, Aug. 19.—It is learned that as a result of the buying movement in ferromanganese which was brought on by the letter from the subcommittee on ferroalloys asking ferromanganese consumers to close for their forward requirements, most of the consumers have closed for the remainder of the year and many of them have closed for first quarter or first half of 1919. Some consumers, including a number of large ones, have not yet bought for the last quarter, but they have signified their intention to do so shortly. The market continues unchanged at $250 for 70 per cent metal.

### Manganese Ore Sold

Philadelphia, Aug. 20.—A cargo of about 2000 tons of Brazilian manganese ore is ready to sail from a South American port. It has been sold at $1.35 a unit, tidewater. This is the prevailing price except for futures for which no vessel has been arranged. The latter are quoted at about $1.30 a unit.

### Making Low Grade Ferro

Chicago, Aug. 20.—The local producer of ferromanganese has its furnace on 30 to 40 per cent ferro this month and will resume turning out 70 per cent ferro by the end of the month. Having heavy obligations for the lower grade it was decided best to turn the furnace and make up sufficient to cover obligations at one time. Some buying of standard ferromanganese for 1919 delivery is being done, but on a small scale. Prompt material is not available except in occasional car lots.

## To Build Mine Sweepers

The Fabricated Ship Corp., Milwaukee, capitalized at $600,000, an outgrowth of the Newton & Codington engineering interests, has obtained contracts from the government for 13 steel vessels and will begin immediately the construction of yards on a 2000-foot water frontage. The contracts call for nine mine sweepers and four river transports, to be delivered by May 1, 1919. Most of the vessels will be 172 feet long and have a 32-foot beam.

# Rail Orders Not Placed

**For Government's Requirements as Yet—Steel Has Been Provided For Pershing's 200,000 Tons of Heavy Rails**

Pittsburgh, Aug. 20.—Manufacturers of standard steel rails still are waiting for the railroad administration to distribute its requirements for the transportation systems of this country. Nothing definite has been learned here as to the tonnages involved or when delivery is to be made. It is not known whether the government authorities and manufacturers have reached an agreement as to prices, although by some it is thought they may be the same as those that are to be paid for the 200,000 tons of 80-pound rails ordered recently for Pershing's operations in France. Spikes for this lot have not been distributed. It is asumed that when the tonnages for domestic railroads are distributed, a considerable rail making capacity, now engaged in the production of shell rounds, will be diverted back to its original purpose. Active demand exists for light rails, numerous inquiries coming from China, South America and some of the allied nations. No difficulty is experienced in getting licenses to export tonnages when they are to be used in connection with important operations, such as the laying of rails in mines and for the transportation of food products. Some makers in this district are no longer quoting on light rails but are shipping entirely on old contracts, having curtailed their output owing to a shortage of steel which is entering into the production of other lines. Makers of small spikes continue to receive specifications somewhat more freely from jobbers and directly from coal mine operators. Demand for standard spikes is dull.

### Cars for France

New York, Aug. 20.—The American Car & Foundry Co. is understood to have received an order for a number of 30-ton freight cars for shipment to France. About 2000 of these cars are said to be required at this time, but all have not been placed. In addition, there are various other sizes to be allotted shortly for use abroad. It is stated that altogether 15,000 to 20,000 cars are involved.

### Price May Soon Be Settled

Washington, Aug. 21. (By wire.)—The prices at which the railroad administration will purchase its requirements of standard rails are expected to be settled at a meeting between the special subcommittee of the American Iron and Steel institute and a special committee of the war industries board in Washington on Aug. 22. Secretary McAdoo has now returned and both the government and the railmakers are anxious to fix the standard rail price which has been hanging fire for some time. There is a heavy tonnage of old orders on mill books which it is now expected will be drawn on gradually. It is not understood that any new domestic orders will be placed as old bookings run well over 1,000,000 tons.

### Foreign Inquiries Appear

Philadelphia, Aug. 20.—New inquiries for 7000 to 8000 car and locotive tires for France and 2600 tires for Italy have appeared. Japan is in the market for 17,000 car axles.

### Place Car Material

Chicago, Aug. 20.—Although no aliocations have been issued on material for construction of the 10,000 military cars for use in France, some of this material has been placed with mills. This has come about by mills taking voluntarily certain tonnages of material they can supply most readily and then applying the automatic priority rules. These cars are understood to take precedence over the domestic cars and builders are bending every effort to give quick delivery. There is a rumor in the market that the government will place about 60,000 more of these light cars, but nothing definite has come out. Light rails are in strong demand, domestic deliveries being mostly to coal mines and about 90 days is required for filling orders. In cases where shorter period is imperative, this can be reduced. There is considerable demand also for light rails for export, these being used for light railroads near the trenches. Production of standard steel rails on the government's recent order for 200,000 tons for France has been increased, steel being furnished at the expense of other finishing mills.

A landslide which stopped all trains on the Southern railway caused the Intermont Coal and Iron Co., Big Stone Gap, Va., to blow out its stack on July 31.

# Demand for Sheets

**On Upward Trend and Bessemer Steel Supply is Short**

Youngstown, O., Aug. 21.—Demand for all grades of sheets is on the upward trend and is far from being satisfied. Jobbers are extremely anxious to replenish their stocks but on account of reduced production, sheetmakers are finding it hard to meet the demands of the jobbing trade. Some valley makers are not taking on any new business. One producer has cancelled several orders on his books. Among the cancellations were orders which were taken some time ago and were held pending a slowing down of the sheet demand. Not seeing his way clear to fulfill his agreement in the face of the present sheet-bar shortage and the increasing number of priority orders, he was forced to notify the various buyers that shipments could not be made.

A sheetmaker in a nearby district has been notified by the government to discontinue the rolling of sheet bars from steel supplied from his open-hearths and to divert the steel for 3-inch shell bars. This will merely mean the changing of rolls on his bar mills to meet the conditions. The government will probably see that this maker is supplied with bessemer stock so as to keep his sheet mills in operation. By means of this arrangement many additional tons of open-hearth steel will be available for shells and as long as the bessemer supply of steel is ample, the production of sheets will not be affected. It is predicted, however, that before long the production of sheets in the valley will swing to a lower ebb than it is now on account of the scarcity of sheet bars which is becoming more and more pronounced. Bessemer steel is as scarce now as ever in the history of valley steelmaking.

**No Improvement In Output**

Pittsburgh, Aug. 20.—No improvement has been made in this district during the past week in the output of sheets, shortage of sheet bars continuing to curtail production. The hot weather, which prevailed up to several days ago, was not a factor in the situation inasmuch as there was more labor than steel. The government is placing good sized tonnages which are exceeding shipments. Jobbers have been submitting orders to sheet manufacturers for one-sixth of the shipments made during the first half of the current year. They are designed to replace stocks upon the basis recently authorized by the war industries board. It is known that the government desires that each manufacturer accept these orders from their regular customers and that it will look with strong disfavor upon the practice of declining them. This would mean that other mills, equally as busy on important government work, would have to take care of the requirements of competitors' customers as well as their own, or jobbers be denied tonnages altogether. While it is probable that replacement orders for jobbers' stocks cannot be filled entirely in August upon the basis of the average monthly shipments for the first six months of the year, government authorities take the attitude that the bookings could be made and the orders taken care of subsequently. This would result in equitable distribution of tonnages for jobbers and consequently would not prove unduly burdensome for any of the mills. Some jobbers complain that their orders are not being honored and are seriously considering the idea of seeking relief through Washington.

**Sheets for Aerial Bombs**

Chicago, Aug. 20.—While the government's demands for steel sheets are not heavy and most sheets going into war material pass through manufacturers' hands, the total of this material demanded for essential purposes is large and buyers whose priority is low on the list find it practically impossible to place their tonnages. An inquiry for 1500 tons of heavy sheets for the manufacture of aeroplane drop bombs is current in the market at present. Mills are operating at about 65 per cent capacity.

## No Tin for Pipes

Youngstown, O., Aug. 21.—Demand for tin plate in this territory is far from being satisfied. Most of the output is being shipped to canmakers and meat packers where it is made into containers. If anything, the demand is expected to increase right along in order that canned meats, etc., may be available for our army in France. Practically no tin plate is reaching makers of hot-air pipe. The latter are making strenuous efforts to obtain material but in view of the extremely heavy orders from the cannery and packing trade, little tin plate is to be had that is not for essential purposes.

**Weather Helps Production**

Pittsburgh, Aug. 20.—Cooler weather having set in, conditions are more favorable for tin plate production, which had been affected considerably by the intense heat which prevailed during the first half of the current month. Because of this fact the output for August is expected to show a rather sharp decline as compared with that of July, which set a record for that month, with a production that exceeded somewhat 3,110,000 base boxes, as compared with 3,059,000 for June. The injury to the vegetable crop in many section of the country because of drought has produced a situation in the canning industry where relief from the government is necessary and the War Finance corporation has decided to stimulate preserving operations by making direct loans to the canners.

## N. J. Clarke to Enter Ordnance Department

Norris J. Clarke, secretary of the Upson Nut Co., Cleveland, has agreed to enter government service and will assume duties in the ordnance department at Washington. He probably will be commissioned as a major. Mr. Clarke became associated with the Bourne-Fuller Co. in 1896 and for many years represented it in the Pittsburgh district. Since 1912 he has been with the Upson Nut Co. He is president of the Bolt, Nut and Rivet institute.

## Labor Trouble Ended

Labor troubles at the plant of Rosenwasser Bros., Long Island city, which is working on government contracts, have been terminated, following a conference with Prof. William S. Ripley, head of the administration of labor standards for army clothing in New York. The men to the number of about 3000, walked out after they had been requested to sign an agreement that they would not ask for an increase in wages for the next six months. Some of the men have been making from $77.50 to $94 per week, while the minimum wage is $20. The daily output is 4000 pairs of shoes, 17,000 gas mask bags, 8000 gun covers, and 1000 aviators' outfits. The plant is to be operated night and day for a period to make up the shortage caused by the walkout.

Willis L. Brownell died at his home in Manchester, Conn., Aug. 11, aged 72. He retired three years ago from the position of treasurer of the Crocker-Wheeler Co., East Orange, N. J.

# Coal is Now the Vital War Factor

## Every New Ship, Locomotive and Mill Needs More Fuel But Garfield Can't Yet See Necessity For Opening New Mines—Thousands of Coal Cars Recently Delivered—Coke Short

Washington, Aug. 20.—Charles Piez's defense of the shipbuilding program of the Emergency Fleet corporation, of which he is vice president, as regards further expansion sufficient to include a vast concrete ship construction schedule, is accepted here as telling the true story of industrial conditions identical with many of the government's activities looking to the successful conduct of the war. One statement alone crystalizes the entire matter, it is held, and that is that "our output of ships is measured by the number of vessels we can equip rather than by the number of hulls we can launch."

### Coal At the Root of Things

This statement goes back to coal which the government more and more is recognizing as the material which will make or break the war efforts of the United States and for that matter, the allies. Every new ship fully outfitted, every new locomotive placed in service, every new plant constructed or added to present industrial units creates a further drain upon the fuel supply of the country. The fuel administration in the past has frowned upon opening new coal fields and Fuel Administrator Garfield last week declared he would not encourage opening new mines at this time.

Chairman Baruch of the war industries board, and it is said the President himself, has reached the conclusion that expansion of the war program is useless without fuel. This is especially true, it is pointed out, since even present facilities, highly essential to the conduct of the war, are hampered by the lack of fuel. The shortage most acute is in coking coal with the result that an Illinois steel plant has had to bank three stacks and likely will have to bank others if the supply of coke is not maintained. The statement has been made that the use of by-product coke in all probability will be limited to pig iron production to public utilities and other war essentials but so far an entire week has passed and the order has not yet been made.

Most of the ships now building are to be oil burning but some of them will be equipped to use either oil or coal. Regardless of how they obtain their power, the transportation facilities for hauling fuel to seaboard are becoming more and more burdened as time goes on. Every launching is a fresh demand for fuel. In this connection it may be pointed out that while Dr. Garfield is reluctant to consider opening new coal fields, particularly because of transportation difficulties, Mr. Baruch is to take up with Director General McAdoo the question of hauling coal.

Now everyone knows Mr. McAdoo wants all the steel he can get for the construction of cars and locomotives. It is generally conceded that the railroad administration got into the construction game too late to get adequate supplies for its requirements. However, any curtailment in the present output of steel affects railroads as well as other war programs and Mr. McAdoo undoubtedly will make some effort to haul all the steel-producing coal necessary. This effort not only will be to keep steel moving to the shipyards, but to keep steel going to boiler and other ship machinery building plants, and to keep those plants operating.

### Coal Cars Delivered

In this connection it may be noticed that more than 10,000 coal cars have been delivered to the railroads by the builders since the first of the year. This provides additional facilities for hauling at least 500,000 tons of coal in a given trip. It is one of the arguments the railroad administration is using to combat the continued statements of the fuel administration that car shortage is largely responsible for failure of the coal production to measure up to expectations.

As far as ships are concerned, the government is not inclined to get into a row over the respective merits of steel and concrete ships, and the matter is generally regarded as a closed incident. The steel and wood programs are so far advanced that the loss of time and effort to start on something as new as concrete ships, would not justify any gains the addition of concrete vessels, further than the 40 new contracted for, might bring. Mr. Piez declared emphatically that it would be impossible to equip concrete steamers as fast as they might be built and that the drain on labor and materials would be too great.

### Tieing Up Ship Steel

The Emergency Fleet corporation's reserve supply of 1,200,000 tons of steel, distributed among its various yards, in addition to the added reserve of 66,000 tons to be shipped by early in October and the 50,000 tons now being delivered weekly, has already drawn down some criticism. The steel on hand, if properly matched, would build more than 4,000,000 tons of ships. This clearly indicates that steel production is ahead of the ship consumption. As Mr. Piez said, "the output of plates and shapes of our rolling mills is considerably greater than the needs of steel shipbuilding at its present rate of production."

The criticism of the Fleet corporation's reserve supply is that it is tieing up tonnage that might possibly be diverted to essential commercial usage, calling for possibly less curtailment than now will have to be if the war program is to be met. This criticism is not as to the shipbuilding program for practically every one is agreed that ships will really "win the war", but it is felt the shipbuilding interests should be content with three or four months' reserve supply of steel. The 4,000,000 deadweight tonnage represented in the present supply is greater by far than the expected total production of both wood and steel ships this year.

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## Leases Larger Quarters

The Independent Pneumatic Tool Co. have leased the entire sixth floor in the Otis building, at 600 West Jackson boulevard, Chicago. This space contains 12,000 square feet and will be occupied by the company for their general offices. John D. Hurley, president of the company stated that the great demand for pneumatic tools for shipbuilding and other government work, had forced his company to seek larger quarters. The space now occupied at 1307 South Michigan avenue contains 6000 square feet while the new quarters provide just double this area. Removal into the new quarters will be effected about Sept. 1.

# Steel Survey

### In Pittsburgh Made by Replogle and Bonner—Output Stimulated

Pittsburgh, Aug. 20.—J. Leonard Replogle, director of steel supply of the war industries board, and James B. Bonner, vice chairman of the subcommittee on steel distribution of the American Iron and Steel institute, representing the industry in Washington, were in Pittsburgh Tuesday. The object of their visit was to confer with manufacturers with an idea of so readjusting operations that an increase in the ouput of shell steel, plates and rails may be effected. Announcement to this effect was made by Mr. Replogle.

Meetings were held with different manufacturers at which plans were discussed. Mr. Replogle stated that railmaking capacity now engaged on projectile steel will be diverted back to its original purpose. New capacity for shell and plate production will be created by the addition of new equipment and by the use of part of that now engaged in the production of wire, pipe and merchant bars. The diversion of steel from these latter purposes already has been done to some extent.

It is understood the government does not propose to increase its requirements, but finds it necessary to get a greater output of projectile steel, plates and rails in order to insure prompt delivery of tonnages already placed and in contemplation. The problem simmers down to one of readjustment of production and distribution of tonnages, and in connection with the attainment of these ends the entire steel situation is being surveyed. As the American forces in France expand it is necessary to provide an ever-increasing quantity of munitions for the fighting line and of plates and rails to afford greater transportation facilities. Mr. Replogle and Mr. Bonner will also visit Johnstown, Pa.

# Committee Called

### For Issuing Misleading Statements of War Labor Board's Decisions

Washington, Aug. 20.—In a statement made by the committee on public information under the authority of the national war labor board on Aug. 4 with respect to the board's findings in the case of the Bethlehem Steel Co. it was made to appear that the basic eight-hour day had been applied throughout the company's plant at Bethlehem, Pa. In this regard the statement was in error, since the application of the basic eight-hour day was not included in the finding. The basic eight-hour day does now and has applied only in the machine shops at Bethlehem, and not to any other department.

In connection with this correction, it is pointed out that frequent errors of this kind have crept into public statements of the awards by the war labor board released by the committee on public information. To correct this tendency, the board has adopted a resolution providing for a form in which decisions shall be expressed in the future, and permitting no public statement with respect to them, except upon the written consent of the chairman of the employer and the chairman of the employe group. This will go a long way toward correcting misrepresentations that have undoubtedly aroused apprehension among employers.

# E. D. Brigham Appointed Manager

E. D. Brigham, has been appointed manager of iron ore, coal and grain traffic for the United States railroad administration with offices at Duluth. He will have charge of all matters connected with the vast ore, coal and grain traffic handled over the Lake Superior terminals. Mr. Brigham is unusually well qualified for this task, having just completed 45 years of service with the Chicago & Northwestern railroad, during which period he held every position in the freight traffic department up to assistant freight traffic manager. In recent years, Mr. Brigham gave a large amount of his time to the ore and grain traffic problems of the Northwestern road and has been highly successful in his efforts.

# The Non-Ferrous Metals

**Copper Lead Spelter Tin**

| | *Copper | †Spot Straits, tin | ‡Lead, New York basis | Spelter St. Louis basis | §Aluminum | Spot antimony |
|---|---|---|---|---|---|---|
| Aug. 14 | 26.00 | ..... | 8.05 | 8.62½ | 33.00 | 13.50 |
| Aug. 15 | 26.00 | ..... | 8.05 | 8.62½ | 33.00 | 13.62½ |
| Aug. 16 | 26.00 | ..... | 8.05 | 8.75 | 33.00 | 13.75 |
| Aug. 19 | 26.00 | ..... | 8.05 | 8.80 | 33.00 | 14.00 |
| Aug. 20 | 26.00 | ..... | 8.05 | 8.87 | 33.00 | 14.00 |

*Government fixed maximum price for prime lake, electrolytic and casting copper, in ingots, pigs, slabs, etc., less than carloads, 27.30c.
†No spot Straits tin offering.
‡Price agreed to by leading interest and independents.
§Government fixed price for 98 to 99 per cent ingot aluminum in 50-ton lots; lots 15 to 50 tons, 33.10c; one to 15 tons, 33.20c.

New York, Aug. 19.—With practically all the major non-ferrous metals under government control, the New York metal market has in some respects almost ceased to exist. The large metal producers, of course, maintain their offices here, with business as usual, but the brokers and dealers whose operations were so important a factor in market prices in former years, are doing practically nothing. Some of the smaller firms have gone out of business, but the majority are maintaining their offices in the hope of a change in present conditions. Practically our entire output of lead, copper, spelter and aluminum is going into war work. Prices on these metals, excepting spelter, are controlled by the war industries board in conjunction with committees of producers. Distribution is regulated by the producers' committees. Even in the case of spelter, which until lately has been a drug on the market, producers are unwilling to sell metal to speculators.

The war industries board, having continued the price of copper at 26c until Nov. 1, consumers have hastened to put their orders on producers' books, in order to get a prior position as regards deliveries. No anxiety is manifested as to possible short supplies of this metal.

The details of the recent government award of 3000 tons of grade C spelter have not been made public, but it is reported the government distributed the business among several scale bidders, taking the lowest price in each case. It is said this price will average lower than 8.25c, East St. Louis. The general market has continued to stiffen, due partly to bidding up by speculators, and partly to the scarcity of offerings by producers. Sales were made this week up to 8.87½c, East St. Louis basis, for nearby shipment.

The war industries board opened bids Monday on 500 tons of spot antimony. The antimony market has been firm, sales in the general market being reported on Monday at 14c, duty paid, exwarehouse. Futures continue higher than spot.

Lead still is being rationed out by the lead committee, like sugar and flour. Inquiry has fallen off slightly this week, due probably to the fact that consumers appreciate the situation. Prices are unchanged at 9.05c, New York and 7.75c East St. Louis. It is reported the war industries board will limit the profits of dealers to ½c a pound.

The government price on aluminum remains 33c, for virgin ingots, 98 to 99 per cent.

The tin market remains weak, owing to recent large arrivals of Banca tin. Spot Banca is offered in New York at 89c; spot Chinese, 88.50c; spot Lamb & Flagg, 88.50c.

# Foundry Planned to Save Manpower

## The Equipment in the Lakey Foundry & Machine Co.'s Plant is Arranged to Keep Production at the Maximum and to Conserve Labor—Adequate Light and Modern Facilities Make This Possible

FOR years close students of the foundry industry have been vitally concerned over the constantly diminishing supply of skilled labor. Although this situation was unsatisfactory prior to the war, there was little danger of it becoming serious so long as normal conditions prevailed. Trade schools have been established all over the country and other measures have been taken to increase the supply of skilled foundry workmen, both actually and relatively. The war with Germany, however, has upset all previous calculations. Thousands of men have been drawn into the army and navy and other thousands into shipbuilding and other direct war activities. At the same time, immigration has been absolutely cut off. The result has been a marked decrease in the supply of labor of all degrees of proficiency at a time when the demands on foundries for increased production are daily becoming more insistent.

The only probable relief is in the efforts that are being made in almost every shop to utilize labor-saving equipment more extensively and more efficiently. But in an existing plant designed for operation under normal conditions there is a limit to the progress which can be made in this direction, and when this limit is reached extensive changes in the general layout and arrangement of the plant become necessary in order to realize further economies.

### *Designed for Labor Saving*

It is profitable, therefore, to study the design and equipment of new plants that have been built in the past few months with a full realization of existing conditions. An interesting shop of this character has recently been completed at Muskegon, Mich., by the Lakey Foundry & Machine Co. It is designed primarily for the production of cylinders and other gray iron automobile castings, but the methods that have been adopted can be applied to many other gray iron foundries.

This plant was built during 1917, largely according to designs prepared by H. A. Becker, president of the Lakey company. In working out the various features of the shop, Mr. Becker constantly kept the existing and probable future labor situation in mind, with the result that the shop is unusually well equipped with labor-saving machinery and, in addition, the departments are so arranged and the work so routed through the plant that the amount of manual labor required, both skilled and unskilled, is reduced to a minimum.

The plant has an output of 65 tons of gray iron automobile and military truck castings per day. It is located on the Lake Michigan waterfront, partly on made ground, on a site that has been the property of the Lakey company for a great many years. The property includes about nine acres, of which 5½ represents filled-in lakeshore land. About 425 men are employed.

The building is a brick and steel structure with ordinary lean-to roofs over the side bays and a trough-type roof over the center bays. This arrangement secures abundance of natural light. A floor plan showing the general arrangement of the building, together with the crane equipment and location of the principal departments is presented in Fig. 6. A typical cross-section showing the roof structure, charging floor and crane and monorail runways is shown in Fig. 16. The building is 310 feet long and 200 feet wide. The cleaning

FIG. 1—A SPECIAL DEPARTMENT IS SET ASIDE FOR CYLINDER MOLDING. CHUTES, *S*, DELIVER THE SAND TO THE MOLDERS' STATIONS. THE FINISHED MOLDS ARE SET ON HORSES

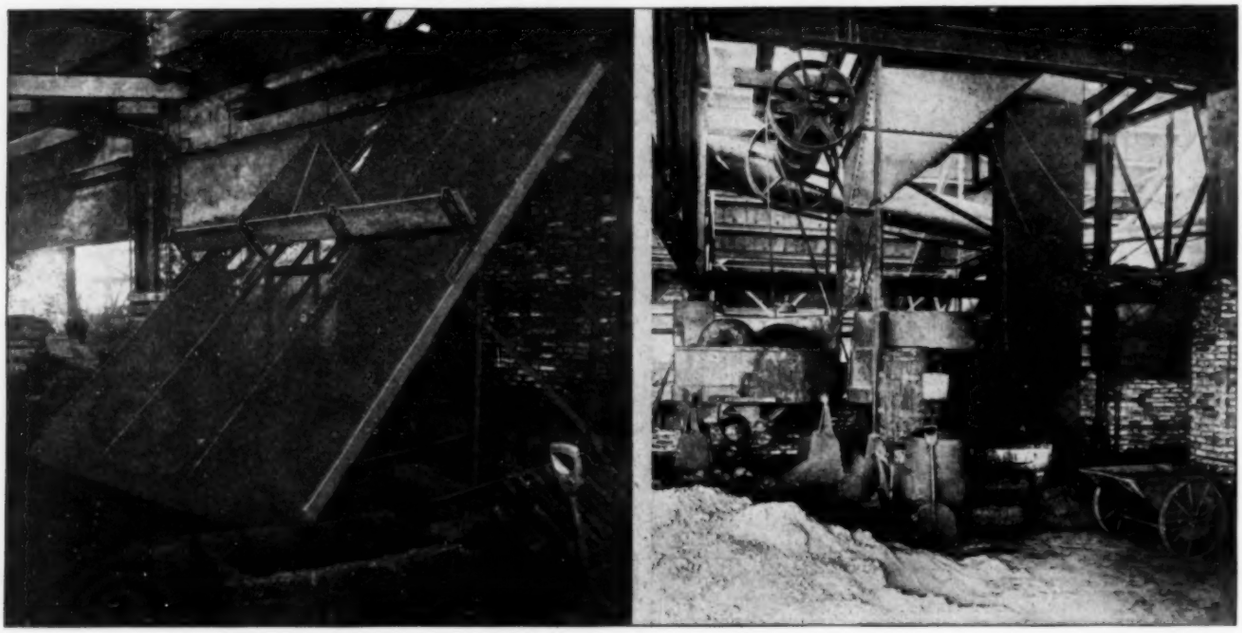


FIG. 2—ALL THE FLASKS ARE SHAKEN OUT OVER A SCREEN WHICH SEPARATES THE SAND FROM THE CASTINGS.
FIG. 3—SAND MIXING APPARATUS ON MEZZANINE FLOOR

room, which extends clear across one end, is 50 feet wide and 200 feet long; it is separated from the rest of the foundry by a brick partition. The foundry proper, therefore, is 260 feet long and 200 feet wide. As shown in Figs. 6 and 16, it is divided into five parallel bays, including a cylinder molding bay, under the charging floor, 50 feet wide; a mold oven and cupola bay, 20 feet wide; cylinder-pouring bay, 50 feet wide; miscellaneous molding and pouring bay, 50 feet wide; and a coremaking bay, also 50 feet wide. The steelwork was fabricated by the Lackawanna Bridge Co., Buffalo, and the building was erected by the National Construction Co., Detroit.

The plant has been carefully laid-out to conform to a certain definite scheme of operations. By studying Fig. 6 it will be noted that the cylinder molding machines are arranged along the west side of the building under the sand spouts. As the molds are finished they are first skidded on horses and then transferred on portable tracks to the drying ovens. These are double-ended and are arranged to discharge directly onto the pouring floor. The cores are made in the east bay and move across the north end of the shop to the assembling department, where they join the molds. Between the pouring and coremaking bays is a 50-foot bay set aside for molding flywheels, pistons, manifolds and other miscellaneous work. The

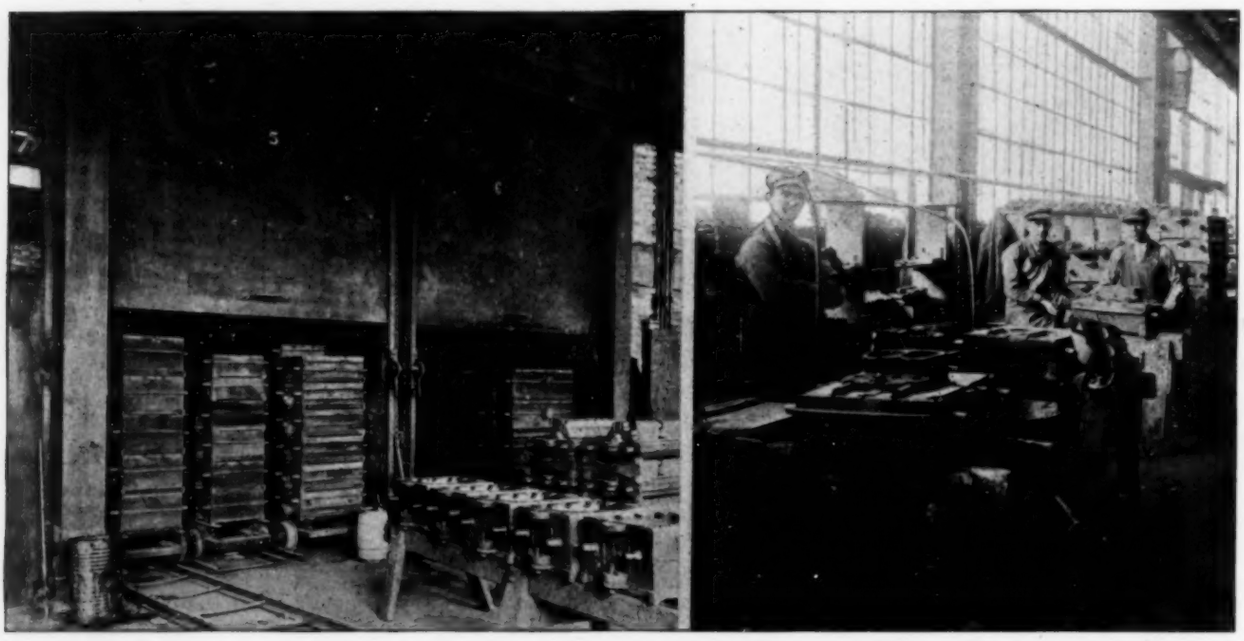


FIG. 4—MOLD-DRYING OVENS SHOWING TYPE OF CARS, PORTABLE TRACKS AND HORSES FOR RECEIVING FRESHLY MADE MOLDS. FIG. 5—A SPECIALLY-TRAINED GANG OF MEN IS EMPLOYED FOR ASSEMBLING THE CORES IN THE MOLDS

flasks are shaken-out over a grating at the south end of the pouring bay, from which the castings proceed direct to the cleaning room extending across the south end of the shop.

There is a basement under the two outside bays with a connecting passage at the north end of the building. This provides for the storage of both molding and core sand and also for mixing and preparing the latter, in addition to other auxiliary operations

The charging floor extends the full length of the shop. The coke, pig iron and scrap are brought up on special elevators at the north end. serve the pouring bay and cupolas. They have a span of 48 feet. A runway is provided in the miscellaneous molding bay, but the cranes have not yet been delivered. A 12-inch I-beam monorail serves all portions of the shop, as indicated in Fig. 6. It is extensively employed and relieves the traveling cranes of a considerable burden. Two Shaw electrically operated telphers are provided for the monorail. Elevators, skids, portable track and belt conveyors, which will be described more in detail later, also are provided for handling materials. In every direction an effort has been screen, which is shown in Fig. 2, is 12 x 16 feet, with a ¼-inch mesh. It is set at an angle of 45 degrees. As the flasks are shaken-out, the fine sand passes through the screen while the castings, with their sprues attached, roll down to the floor at the foot of the screen. Nails, gaggers, etc., also roll down with the castings. In fact, the Lakey company has found it unnecessary to employ a magnetic separator after the sand passes through this screen. The device is exceedingly simple, but in practical use it has proved effective for separating the sand from the castings.

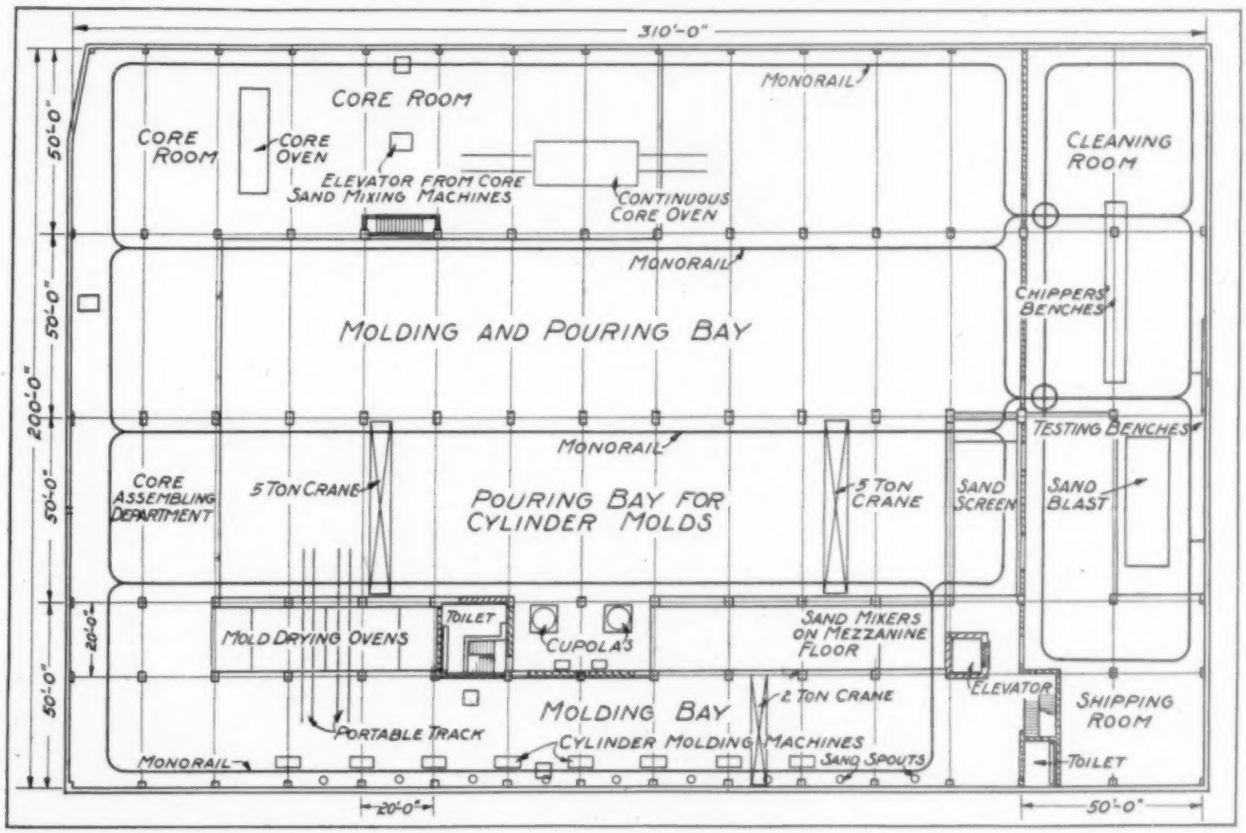



FIG. 6—PLAN OF LAKEY FOUNDRY SHOWING GENERAL LAYOUT OF SHOP AND ARRANGEMENT OF DEPARTMENTS

The used molding sand, together with the proper quantity of new sand, also is elevated to this floor, where it is prepared and returned to the molders through chutes over the molding machines, as shown in Fig. 6 and at *S*, Fig. 1.

The thorough manner in which the various production operations are coordinated is suggested in the foregoing paragraphs. To further unify the work and reduce labor costs, a comprehensive crane and trolley system has been provided for handling materials and work in process of manufacture.

The cylinder molding bay is served by a 2-ton Shaw crane with a span of 27 feet. Two 5-ton Shaw cranes made to save all possible manpower.

The arrangements for handling and preparing the molding sand are exceedingly interesting. The sand is handled mechanically, but at the same excessive outlay for equipment has been avoided. No effort is made to rush the sand through the system and ample time is allowed for the sand to season before it is used again.

The flasks to be shaken-out are picked up by the crane and carried to the shaking-out station at the south end of the pouring bay. The location of this station is shown in Fig. 6. A large inclined screen, somewhat similar to a plasterer's screen, is provided at this point for separating the sand from the castings. This There is a grating in the floor under the screen through which the sand falls to bins in the basement. From these bins the used sand passes into the boot of a bucket elevator, which hoists it to the mixing station located on the charging floor. This station is shown in Fig. 3. The bucket elevator may be seen at the right together with the sand hopper into which it discharges. The new sand which is added to the mixture, is shown on the floor in front of the mullers. Two mixers of the Simpson type built by the National Engineering Co., Chicago, have been provided. Their general arrangement is clearly illustrated in Fig. 3. The chute from the sand hopper is so arranged that

the sand may be discharged into either mixer.

The prepared sand is discharged into 2-wheel buggies, one of which is shown at the extreme right in Fig. 3. These buggies are used to transfer the sand to the spouts leading to the molders' stations in the molding room underneath the charging floor. One of these spouts

FIG. 7—A PART OF THE CYLINDER POURING FLOOR SHOWING 3-PART FLASKS CLOSED AND CLAMPED

is shown at *S* in Fig. 1, and their general arrangement is indicated in Fig. 6. The spouts discharge the sand onto the floor beside the molding machines, from which it is shoveled into the flasks. It will be noted that the entire sand-handling arrangement is relatively simple. An effort has been made to avoid the use of long conveyors and complicated machinery, and at the same time to provide adequate facilities for handling the sand economically and preparing it efficiently.

### *How Cylinders are Molded*

The general arrangement of the cylinder molding department is shown in Fig. 1. At the present time, practically all automobile cylinders are molded according to a standardized method, in 3-part flasks with the tops of the cylinders in the drag. Separate machines usually are provided for molding the drags, cheeks and copes. Experience has shown that all of the molds must be dried and for this purpose extensive oven equipment is necessary. After the molds are made and dried, the cores must be set. This is perhaps the most important operation in a cylinder foundry. The cores are assembled in the drags, the work being done by a specially organized gang of men who are thoroughly trained.

At the Lakey plant four gangs of men co-operate in making cylinder molds and preparing them for pouring. The flasks are rammed-up and the molds formed by a gang of specially trained operators working on the molding machines. Both stripping-plate and rockover machines are employed, the former being used for molding drags and the latter for making the cheeks and copes. Pridmore, International and Osborn machines have been installed in the Lakey plant. Some of the machines for the larger molds are of the jar-ramming, roll-over type. As fast as molds are made, they are set on horses, as shown in Fig. 1, from which they are transferred to the oven cars shown in Fig. 4. This illustration shows one of the horses carrying freshly made molds as well as the oven cars fully loaded. The cars operate on 24-inch gage tracks and portable track sections are provided for running the cars out into the molding room for loading and into the pouring bay for unloading. These portable sections which are about 7 feet long, can be readily moved about to meet the requirements of the work. When the flasks are loaded on the cars, the drags are stacked up on the bottom boards. Special separating plates, however, are provided for the cheeks and copes. These plates may be seen at the left in Fig. 4.

### *Drying Facilities Are Ample*

The oven cars are of simple I-beam construction, with four wheels, and after they are unloaded in the pouring bay they are stacked, four or five in a pile, and returned to the molding room by means of the monorail trolley system. This arrangement makes it possible to take care of the work with a minimum number of cars and at the same time the cars are never handled by hand except when they are pushed in and out of the ovens.

As indicated in Fig. 6, six drying ovens have been provided and space has been left at the south end of the shop for the installation of another battery of the same size. Each oven is approximately 10 feet wide, 20 feet long and 8 feet in height. The entire battery is coal-fired from a conveniently located point in the basement.

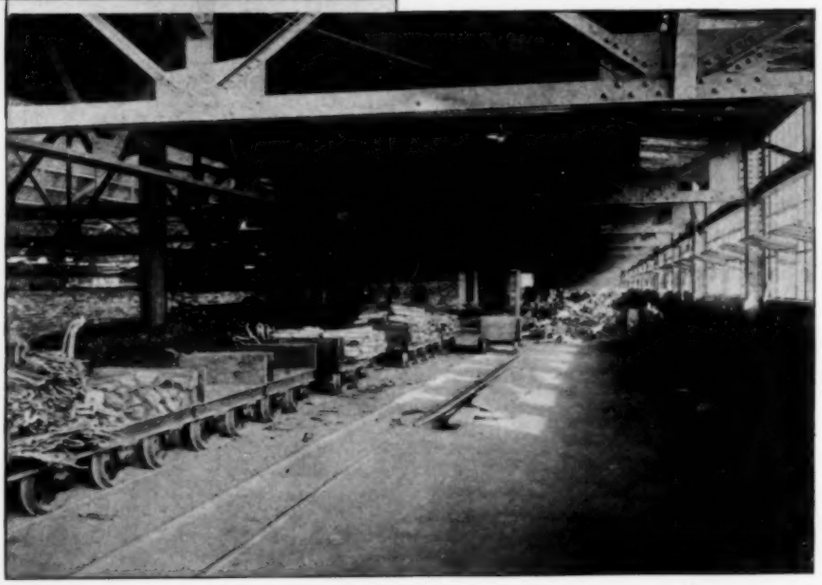
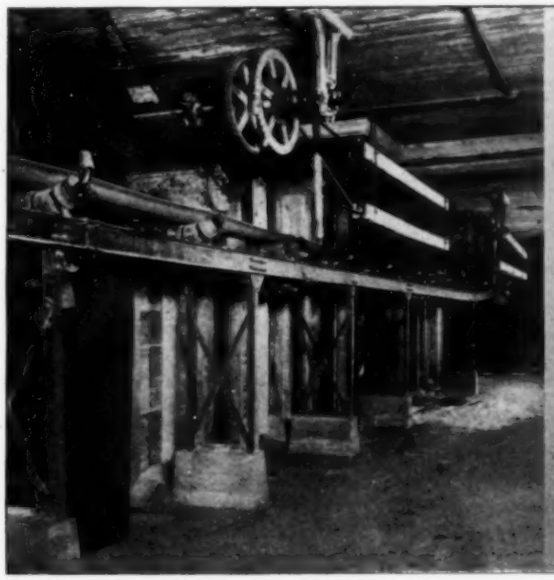


FIG. 8—THE CHARGING FLOOR IS UNUSUALLY LARGE AND WELL LIGHTED

The cheeks and copes are delivered directly from the drying ovens to the pouring floor where they are set out on low horses. The drags are transferred by the cranes to the core assembly department at the north end of the shop. At this point the cores

FIG. 9—AN AISLE IN THE CORE ROOM. FIG. 10—ANGLE-IRON CORE-OVEN RACKS ARE HANDLED BY ELEVATOR TRUCKS



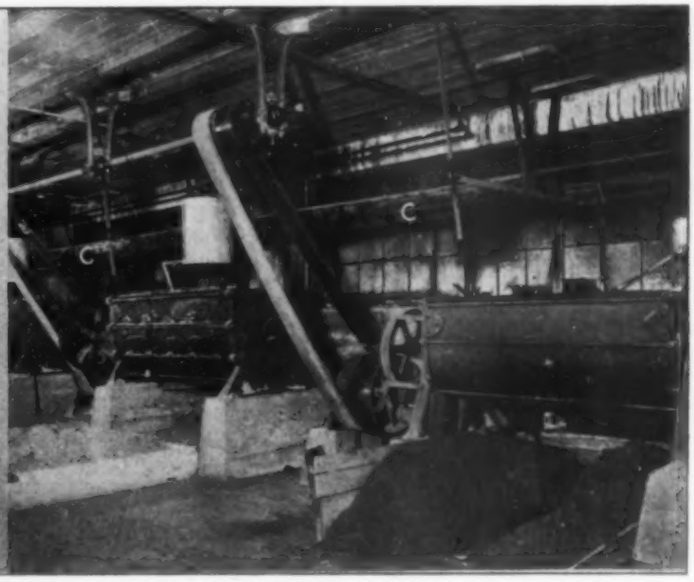



FIG. 11—CORE SAND ELEVATOR AND CONVEYOR. FIG. 12—CORE SAND MIXERS WITH DISTRIBUTING CONVEYOR, *C*

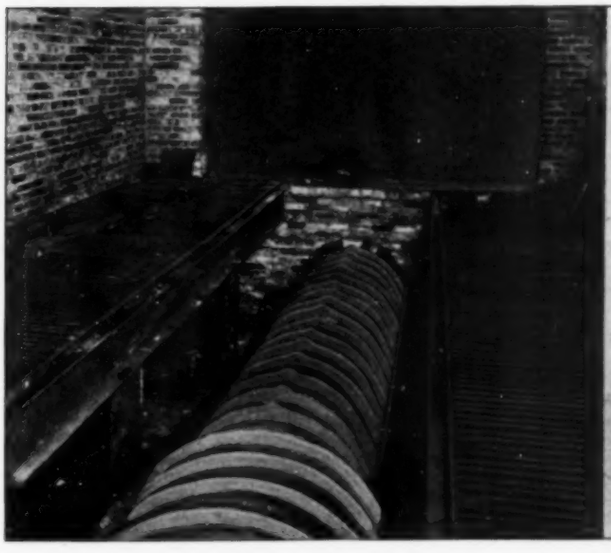


FIG. 13—CORE OVEN FIREBOX ROOFED WITH BUNGS. FIG. 14—MACHINES FOR BENDING CORE WIRES

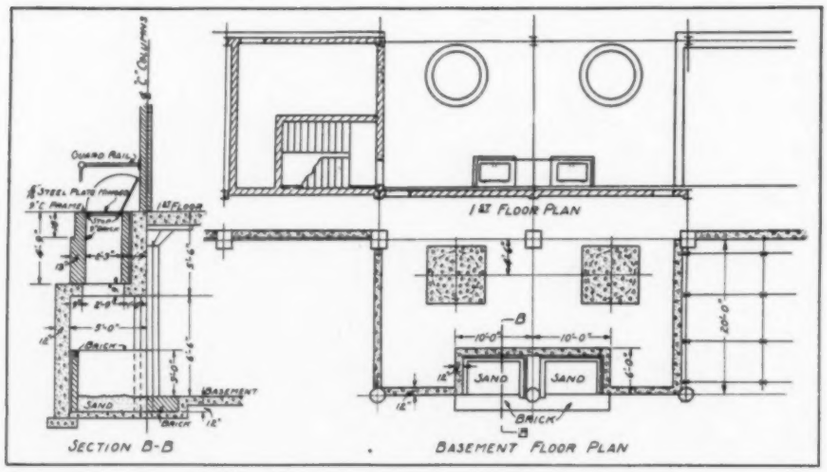



FIG. 15—ARRANGEMENT FOR HANDLING MATERIAL FROM CUPOLA DROP

are assembled by a gang of specially trained men. The arrangement of this department is shown in Fig. 5. The flasks are supported on horses during the assembling process. Each man is provided with a compressed air hose and nozzle for blowing out molds. The cores, of course, are assembled to jigs and gages in order to insure accurate work. As fast as the cores are set in the drags, the flasks are returned to the pouring floor where they are assembled with the cheeks and copes, and clamped for pouring, as shown in Fig. 7. This illustrates the floor about noon and indicates only a part of the day's work. A separate gang of men is employed for closing the molds and another gang does the pouring.

All of the work has been thoroughly subdivided and standardized with the result that the Lakey company is able to train a man for any given operation in approximately two weeks. This makes it unnecessary to employ highly skilled molders which are practically unobtainable at the present time. Also, with the class of men employed, there is less liability of labor trouble.

As previously explained, the flywheels, manifolds, pistons, etc., are molded and poured on the floors immediately adjacent to the cylinder pouring floor. This work is handled in a conventional manner, standard stripping-plate and rollover machines being employed. Dry-sand cores are used for molding pistons.

Two Whiting cupolas, 54 inches in diameter inside the lining, have been provided for melting the metal. These cupolas have a shell diameter of 72 inches and a melting capacity of 10 to 12 tons per hour. They are installed in the middle of the shop alongside the cylinder pouring bay, as indicated in Fig. 6, the cupolas being set with their centers 10 feet apart. The molten metal is handled entirely by the traveling cranes and monorail system. This makes it possible to deliver the metal to any part of the shop quickly and to handle it with a minimum of labor.

*Special Receptacles for Cupola Drop*

As previously stated, there is a basement under the bay in which the cupolas are situated. Advantage has been taken of this arrangement to provide for the disposal of the cupola drop. The arrangements for this purpose are clearly shown in Fig. 15. Behind each cupola is a trap door 2 feet wide and 3½ feet long. It consists of a steel plate hinged at the back. It opens into a brick-lined chute which discharges the material onto a sand hearth level with the basement floor. The sectional drawing at the left shows this arrangement. After the bottoms of the cupolas are dropped the material is raked into the trap doors through which it falls to the basement where it can be disposed of conveniently. The material from the drop is handled so quickly that there is no time for fumes or steam to accumulate in the cupola compartment.

At the Lakey plant an entire bay has been set aside for coremaking, this department covering an area of 13,000 square feet. The core benches are arranged along parallel aisles, as indicated in Fig. 9, with steel racks between the rows of benches for receiving the finished cores.

Fig. 10 shows one of the racks used while baking the cores. It consists of a framework of angle iron holding short lengths of pipe which form the shelves. This type of rack is not readily warped by the heat. It is inexpensive and if any of the pipes become damaged, they may be readily renewed. The rack is moved in and out of the oven by an elevating truck. The truck shown in Fig. 10 was furnished by the Barrett-Cravens Co., Chicago. A number of Cowan trucks also are used.

Unusually complete equipment has been provided for handling the core sand without the intervention of manual labor. The sand is obtained from the lakeshore nearby. The storage bins are in the basement under the core room at the north end of the building, paralleling the railroad tracks. The sand, therefore, may be conveniently discharged from the cars into the bins. A hopper is fitted into the floor of each bin with a screw conveyor underneath. These conveyors discharge into a bucket elevator *B*, Fig. 11, which delivers the sand onto a belt leading to the mixing apparatus. The elevator is provided with a distributor for feeding the sand onto the belt properly. Fig. 11 clearly shows the general arrangement of the apparatus. The belt conveyor discharges the sand into a large hexagonal, taper screen which removes the large pebbles and grades the sand.

The screened sand is discharged into a screw conveyor, *C*, Fig. 12. This conveyor, which runs the full length of the mixing room, is provided with suitable gates for discharging the sand directly into the machines. The arrangement of these gates is clearly shown in Fig. 12, which also indicates

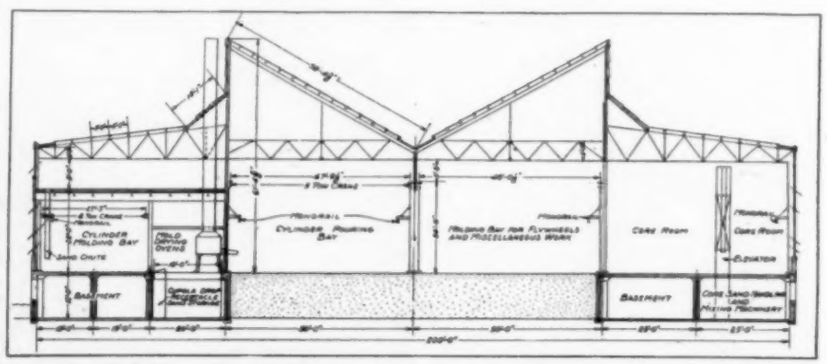


FIG. 16—TYPICAL CROSS-SECTION OF LAKEY FOUNDRY SHOWING ROOF CONSTRUCTION AND CRANEWAYS

the character of the sand-mixing equipment. Five mixers have been installed. Three were furnished by the Standard Sand & Machine Co., Cleveland; one by the Blystone Mfg. Co., Cambridge Springs, O., and one by the National Engineering Co., Chicago. The mixers are mounted on concrete piers to facilitate the discharge of the prepared sand. The latter is dropped into shallow floor bins from which it is transferred to wheelbarrows and buggies for removal to the core room above. The core sand handling plant was designed by H. W. Caldwell & Sons Co., Chicago, as were the conveyors, bucket elevators and screens.

A very unusual direct-acting elevator operated by compressed air is provided for hoisting the core sand from the mixing room in the basement to the coremakers' benches on the main floor. This elevator, designed by M. C. Young, master mechanic of the Lakey Foundry & Machine Co., is shown in Fig. 17. It consists of a framework with a suitable hoisting cage connected to an air cylinder 5 inches in diameter and 13 feet in length. In other words, the elevator is practically an enlarged, direct-acting pneumatic hoist. It handles from 300 to 500 pounds at one time and is unusually quick acting. It also was inexpensive. The hoist itself cost $95, the cage $57 and the entire installation less than $200.

The Lakey company makes no effort to reclaim its core sand since very cheap raw material of good quality is obtained from the shore of Lake Michigan nearby.

For baking the cores, two batteries of ovens have been provided, as shown in Fig. 6. One set of ovens, at the north end of the shop, are of the single end compartment type. Eight compartments, each about 12 feet deep and 7 feet wide, are provided. This oven is fired with coal from two fireboxes in the basement.

A new oven of the continuous, double-end type has also been installed at the south end of the core room. The interior of this oven which is 24 feet long and 16 feet wide, is shown in Fig. 13. This illustration indicates the novel flue and firebox construction. Instead of roofing over the firebox and main flue with brick arches of the usual type, cast iron bungs, similar to those used on air furnaces in malleable foundries, are employed, the principal difference being that in this case the bungs are nearly semicircular in form. The bungs are provided with a brick lining and are set in place in the usual manner. This construction makes it possible to make repairs in an hour or so and it is practically never necessary to shut down the oven for repairs to the firebox or main flue.

This oven also has a flat roof built of I-beams set on 24-inch centers with the intervening spaces filled with hollow tile. The Lakey company estimates that this type of roof costs half as much as a brick arch roof of ordinary construction. It also may be repaired easily by replacing individual tiles which become damaged.

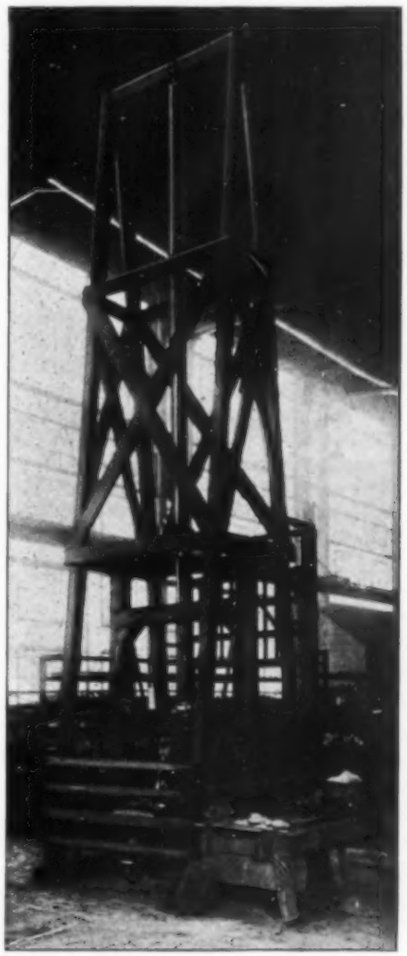


FIG. 17 — DIRECT-ACTING PNEUMATIC CORE SAND ELEVATOR

The core oven is 9 feet high and is provided with Kinnear rolling doors.

An unusually large number of wires are required for the cores for automobile and motor truck cylinders. Foundries specializing on this class of work, therefore, have to provide facilities for bending the wires to the proper shape and for reclaiming the used material. For this purpose, the Lakey company has installed three core wire bending machines of a unique type patented by J. A. La Course, Muskegon, Mich. These machines, together with the inventor, are shown in Fig. 14. Some of the work turned out also is illustrated. The machine consists essentially of a handwheel mounted on a shaft carrying a faceplate on each end. The faceplates are provided with jaws in which the wires are inserted. Various adjustable rests and standards also are provided over which the wires are bent. When the machine is properly set up, it will bend wires very rapidly and accurately. This department also is equipped with two wire-straightening machines of standard type.

The cleaning room at the south end of the shop has a floor area of 8500 square feet exclusive of the shipping department. An automatic room-type sand blast installation has been furnished by the Panghorn Corp., Hagerstown, Md. Suitable chipping benches, grinding stands, water-testing benches, etc., also are provided. The equipment in this department in general is standard and the methods present no unusual features.

The shop is provided with a heating plant consisting of two 100-horsepower return tubular boilers. These boilers are coal-fired. An additional boiler was installed recently.

Steam from the boilers is passed through coils over which air is drawn by two large fans furnished by the American Blower Co., Detroit. From the fans, the warm fresh air is distributed through pipes to various parts of the shop.

The power for handling the machinery throughout the plant is purchased from the local central station. The current is led into a 6-panel switchboard from which it is distributed to the various motors, etc., throughout the shop. Four air compressor units are installed. Direct current for the cranes is supplied by a motor-generator set consisting of a 75-horsepower, 440-volt, 30-cycle motor belted to a 50-kilowatt, 250-volt, 200-ampere generator. The motor runs 850 and the generator 1150 revolutions per minute. This set was furnished by the General Electric Co., Schenectady, N. Y.

The pig iron, scrap, etc., used by the company, is stored in a yard adjoining the lake, north of the shop. This yard is separated from the plant by railroad tracks which run alongside the building. For conveying the material to the charging floor a bridge has been built across these tracks with an elevator at the outer end. The bridge is 65 feet long, with a clearance above the tracks of 34 feet. The elevator is of the customary platform type. A separate installation, including suitable receiving bins and a bucket elevator has been provided for transferring the coke directly from the cars to the charging floor without any re-handling.

# A New Electric Heating Furnace

## Details of Apparatus for Heating Steel for Annealing and Forging—Much Experimental Work Performed—Early Types Unsuccessful—Silicon-Carbide Resistance Material Employed—Definite Heat Control Assured

BY WIRT S. SCOTT

FOR several years the Westinghouse Electric & Mfg. Co. has been conducting experimental work on resistor type furnaces for forging. The first investigation was with a granular graphite resistor bed 9 inches wide, 8 inches deep, by 36 inches long, for heating a furnace having an opening 36 inches wide, 24 inches deep by 10 inches high. Other resistor materials and various combinations of materials consisting of granular graphite, coke, charcoal, and finally these materials in various combinations, also in combination with carbon blocks, were given exhaustive tests, always with the same general result. It is sometimes of equal importance to know the reasons for failures as it is to know the reasons for success, hence it should be of interest to know the reasons for discarding all of the foregoing resistor materials as being unsuitable for an electric forging furnace.

To secure even moderately successful results, it was found that resistor material must be of the purest carbon or graphite. If any slag or ashes are left from the combustion of the resistor, they remain in the bed, so that the relative proportion of such material is gradually increasing with time, causing an increase in the resistance of the furnace.

### *Clinker Retards Action*

If the slag or ash is fusible at the temperature of the resistor bed, a clinker will be formed which very rapidly extends through the mass, resulting in a rapid increase in resistance and consequent failure to heat.

When the furnace was maintained for a considerable length of time at sufficiently high temperature to turn out heated steel at 1800 degrees Fahr., we found that the temperature in the bottom of the resistor bed exceeded the safe limits of refractory materials. With a temperature of 1800 degrees Fahr. on the surface of the bed, it was found that the temperature at the bottom was approximately 3600 degrees Fahr. This great temperature difference is due to the electrical characteristics of carbon in that it has a large negative temperature resistance coefficient, that is to say, as the temperature increases, the resistance decreases. It is evident that the carbon in the bottom or at the center of the bed will operate at higher temperatures than the surface, which has an opportunity to radiate its heat to the surrounding air and chamber. An increase in temperature at any given part, lowers the resistance through that part, which in turn causes more current to flow, and so on, the temperature gradually increasing with the current. Conditions tend to become stable at any very high temperature, but greatly in excess of that which may be safely withstood by any refractory material now available.

In heating a piece of work in an ordinary fuel fired furnace, heat is transferred to the work by conduction from the hot gases and by radiation from the walls. The walls are maintained at a temperature higher than that desired at the work because they are continuously swept by the hot gases. In an electric furnace we do not have this action to heat all of the surface uniformly. If heat is generated only on the floor of the hearth, the side walls and roof must obtain their heat by direct radiation. If cold pieces of metal are laid closely over the surface of the resistor hearth, they will interfere with the radiation of the heat to the walls and roof directly in proportion to the amount of hearth surface they cover This would mean that the work would be heated from the under side only and instead of receiving heat from the walls and roof, it would be giving off heat, thereby always having a great difference in the temperature in the two opposite sides. In order to heat the upper surface to a sufficiently high temperature, the lower surface must be overheated.

During the latter part of 1916, we began experiments using carbide as a resistance material. A study of the chemical and physical properties of silicon-carbide led us to believe that it possessed desirable qualities essential to a suitable resitor for an electric forging furnace, but also indicated that there were many difficulties to be overcome which were real problems in themselves. The temperature of formation of this resistor is 3542 degrees Fahr. The temperature of decomposition is 2220 degrees Cent. or 4018 degrees Fahr. There is no oxidation of this material in pure oxygen at 1000 degrees Cent. or 1800 degrees Fahr. From 1500 to 1800 degrees Cent. (2732 to 3272 degrees Fahr.) oxidation is very much retarded by the fused silica coating. Neutral or reducing gases, such as carbon monoxide, nitrogen and hydrogen have little or no action. The hardness is between the ruby and the diamond. The specific gravity is 3.12 to 3.20. Based on a specific gravity of 3.20, the weight of the solid block without pores is 199.7 pounds per cubic foot or 0.116 pounds per cubic inch.

In order to adapt silicon-carbide to its various uses the tensile strength of the bonded articles may be made to vary between wide limits. In ceramic bonded articles where the bond does not introduce objectionable physical or chemical properties, a tensile strength of 1400 pounds per square inch may be attained. A sacrifice of resistance to heat changes and chemical actions affecting ceramic articles must be expected with high tensile strength.

### *Electrical Conductivity*

The resistor is a conductor of the second class. At ordinary temperature its conductivity is very low, being several times less than carbon. With increase of temperature its conductivity increases very rapidly, as it has a large negative temperature resistance co-

### The Road to Success

*DAY by day the electric furnace assumes a more important place in the metallurgical world. Up to date its greatest advances have been in the melting field. At the same time, the demand for a practical electric heating furnace, particularly for high-grade steels, has been insistent and many experiments have been made on apparatus of this type. The accompanying paper, read before the Association of Iron and Steel Electrical Engineers by Wirt S. Scott, describes the interesting experiments of the Westinghouse Electric & Mfg. Co. leading to the development of a successful electric tool-steel heating furnace. The failures as well as the successes are frankly recorded by Mr. Scott.*

efficient. The resistivity of the bricks varies with differences in porosity and chemical composition. However, it is interesting to note that at temperature above 1800 degrees Fahr. the resistivities have approximately the same value.

A general idea of the variation of the resistance will be obtained from the following:

| Temperature | Resistance, per cu. in. |
|---|---|
| 75 degrees Fahr..... | 50.00 Ohms |
| 1000 degrees Fahr..... | 18.00 Ohms |
| 1800 degrees Fahr..... | 3.70 Ohms |
| 2550 degrees Fahr..... | 0.65 Ohm |

The first complete Westinghouse furnace of this type which gave promise of success had an outside dimension 41 inches wide across the front, 27 inches deep and 48 inches high. It was designed with two working chambers 7 inches long by 5 inches high, for heating of 50 pounds of steel per hour to 1800 degrees Fahr. in each chamber, or a total of 100 pounds per hour for the furnace. The resistors consisted of blocks having a cross section of 4½ inches by 2½ inches passing above and below the working chamber. The resistors terminated in electrode chimneys filled with granular graphite, into which steel terminal plates extended, for external connections.

Owing to the high resistance of this type of furnace when cold, and due to the length of resistors used, a starting pressure of 220 volts was required, which was cut down in a few minutes time to 110 volts, and then gradually reduced until 60 volts was reached, which maintained the proper temperature.

### *Paving the Way to Success*

The time required to bring the furnace up to an operating temperature of 1800 degrees Fahr. was eight hours, starting with the furnace cold. Owing to the great heat reserve capacity of the furnace, the time required in successive heatings was greatly reduced, depended upon the length of time the furnace was out of operation. In order to have the furnace available for immediate use, sufficient current was maintained on the furnace during the night to supply the radiation losses. On a 20-hour continuous forging test the average input was about 18 kilowatts, or 300 amperes at 60 volts. The charge during this test consisted of approximately four pieces of steel weighing six pounds total, each piece requiring an average of three heats, one from cold to 1800 degrees Fahr., the other two from about 900 degrees to a final temperature of 1800 degrees Fahr. The hourly output averaged 20 pounds heated from 70 to 1800 degrees Fahr. and 40 pounds from 900 to 1800 degrees Fahr.

No special attention was given to the thermal insulation of the furnace since that was of secondary importance, and a matter which could be taken care of at a later date, once we secured a suitable construction. Notwithstanding the light insulation that was used, a furnace efficiency of 41 degrees was maintained. The furnace ultimately proved unsatisfactory due to unequal heating of the two chambers.

The second complete furnace was 46 inches wide, 38 inches deep and 48 inches high, inclusive of an iron stand 12 inches high. The radiating surface was approximately 81 square feet. The resistor consisted of two blocks 2½ x 4½ inches in cross section by 9 inches in length, connected in parallel, one over the heating chamber and one underneath, 2½ inches apart, forming a heating chamber 7 inches wide, 11 inches deep by 2½ inches high. The resistors were surrounded and imbedded in a refractory lining made up principally of a crucible clay and a graphite mixture. Surrounding this extremely hot area, silica bricks were used, backed up by ordinary fire brick.

### *Electrode Chimneys Used*

Electrode chimneys or wells were used very much the same as with the first furnace. The electrodes consisted of granular graphite and an amorphous carbon rod 4 inches square and 20 inches long imbedded in each electrode well, and extending upward from near the steel terminal plate at the bottom of each well to the ends of the two resistors. The granular graphite insures electrical contact between the resistor blocks and the carbon block, and between the carbon block and the terminal plate. A cool terminal is thus obtained.

The heat insulation on the outside of the furnace consisted of 4½ inches of high grade insulating brick all around, except opposite the electrode walls and around the door. Thin sheet steel held in place by angles and tie rods clamped the insulating bricks together.

The starting voltage on this furnace was 75 volts, and the time required to raise the temperature of the heating chamber to a forging temperature of 1800 degrees Fahr. was two hours. The power required at full load was 10 kilowatts or approximately 300 amperes at 33 volts. At no load, a consumption of five kilowatts or 200 amperes at 25 volts obtained. This corresponds to an efficiency of 50 per cent.

The longest continuous run extended over a period of 15 days, or 370 hours, the furnace being maintained continuously at a forging temperature of 1800 degrees Fahr. After these tests, an examination of the resistors was made, but no perceptible effect due to the continuous heating could be determined. The control equipment consisted of a 110-volt transformer with knife switches for obtaining starting voltage, and interlocked magnet switches, push button operated, for obtaining the required running voltage. A circuit breaker was used as in the first case for protecting the furnace against an increase in current above the safe operating value.

The first furnace to be placed in continuous operation under actual shop conditions was built early in 1917. This furnace, a duplicate of the one last described, was installed in the tool forging shop of the Westinghouse Electric & Mfg. Co., and while it was considered that the furnace was still in its experimental stages, it was essential that experience showing how it would stand up under regular shop conditions be obtained. Several failures of the furnace were recorded, but in each case the failure was due to the improper functioning of the control equipment which was being developed at that time.

This furnace has been in operation for a period of one year, with highly encouraging results. Many continuous runs for periods of 400 and 500 hours have been made, forging high speed steel to 1850 degrees Fahr. and drop forging at 2200 degrees Fahr. without any records of resistor failure, or any perceptible deterioration in the resistor due to the high operating temperature. One run of 500 hours was made at a temperature of 2650 degrees Fahr. without experiencing any difficulty whatever.

### *High Speed Steel Preheated*

It was found advisable to preheat high speed steel before placing it in the heating chamber. A preheating chamber was constructed under the heating chamber, consisting of an opening in the front of the furnace just below the lower resistor, into which the tools could be placed for preheating to eliminate strains that otherwise would be set up in the steel when placed in the furnace.

Another furnace has been built and placed in operation with a heating chamber 18 inches wide, 12 inches deep and 4½ inches high. The capacity of this furnace is 20 kilowatts, the starting voltage 220, and the running voltage 70. The efficiency is 60 per cent. This furnace is designed to operate on steel drop forging requiring a temperature of 2300 degrees Fahr.

The control equipment at the present time is not completely automatic. That is to say, the furnace is not automatically brought up to the required temperature, but once the required temperature is obtained, then the control equipment will maintain that temperature within certain limits. Interlocked knife switches are used for connecting to the starting

taps on the transformer. As the furnace increases in temperature it is necessary to step down to lower voltages. The lower voltage taps are controlled by means of magnet switches operating over a relatively small percentage of the voltage range in order to obtain close temperature regulation.

The control equipment thus far developed is semi-automatic in its action, and may be used with entire satisfaction where the operator has a proper appreciation of its functions. It is the intention of the Westinghouse company to develop a complete automatic control equipment, which it is hoped to have perfected at an early date.

Forging tool steel requires an operating temperature of from 1800 to 2300 degrees Fahr. depending upon the kind of steel used. The great difficulty with a fuel-fired furnace is not in the ability to obtain a sufficiently high heat, but in uneven heating. It is almost impossible to obtain uniform temperature throughout the entire chamber; consequently when the furnace is operated on a production basis, with several pieces being heated at one time, some of the pieces of work will be much hotter than others. The pieces in the hottest portion in all probability will heat much too rapidly, with the result that either the corners of the tools are burned before the material is heated clear through, or if it is removed before the surface burns, the center has not reached a sufficiently high temperature. In this case the soft outside will yield much more rapidly than the hard inside, with the result that the outer particles will be torn asunder while the inside will be sound. The loss through oxidation takes places while the work is being heated in a fuel-fired furnace and also after it has been withdrawn and is being forged. The oxidation in the furnace is by far the larger of the two factors.

Annealing or softening is accomplished by heating steel to a red heat ranging from 1300 to 1500 degrees Fahr. depending upon the grade of steel and then cooling it slowly. If the temperature is carried too high, it may leave the steel actually harder than the proper heat would leave it, besides running the risk of forming a scale. If scale is raised on a piece of steel, this scale will be a granular oxide of iron, and may spoil the tools used to cut it, sometimes changing the structure of the steel, making it brittle and causing it to crack in hardening. The effect of heat on steel may be noted by taking a bar of steel nicked in 10 or 12 places about ½ inch apart, heating it in a fuel fired furnace until the end is up to a good white heat, and then plunging it into cold water. In breaking off the pieces at each nick, it will be seen that characteristic changes have taken place in the steel. The end of the rod which had been overheated will be very open or crystalline in structure, the succeeding pieces becoming closer and closer in grain until one piece is formed possessing a close, oven grain, the structure desired.

For every variation in the temperature above a certain point there is a variation in grain of the steel. The effect of too high a heat is to open the grain and to make the steel coarse. The effect of irregular heat is to cause irregular grain, irregular strains and cracks in the steel. The electrically heated furnace offers the advantage of definite heat control.

# British Skill Wins Over German in India

BY ANDREW McWILLIAMS

SOME account of the technical side of the successful establishment of the heavy steel industry in India, the home of possibly the oldest branch of iron and steel manufacture in the world, is worthy of permanent record.

It seems that J. M. Heath started to build a works at Porto Novo, on the Madras coast, for making charcoal pig iron and wrought iron about 1830 and struggled on till about 1840, but without financial success. A new company was formed in 1853, but it also was not a commercial success and stopped in 1874. In 1875 the Barakar Iron Works Co. at Barakar on the Jherria coal field, about 143 miles northwest of Calcutta, started to make pig iron with coke as fuel, but the company failed in 1879. The government took up the works and carried on till 1889, when they turned it over to the Bengal Iron & Steel Co. This company is in a flourishing condition, and is making good profits out of the manufacture of pig iron and iron castings. In 1903, the company decided to erect a steel plant at its works at Kulti at a cost of over $500,000. The steel furnaces came into operation in 1905, but were shut down after less than a year's working. Complete success has ultimately been attained by the Tata Iron & Steel Co., which established works with a capital of $10,000,000 at Sakchi, Singhonum on the Bengal Nagpur railroad, where the concern now smelts pig iron, converts it into steel and rolls it into finished sections, besides making iron castings and selling the surplus pig iron.

For pig iron the ore is obtained from Gurumaishini, a mountain in Mourbhanj state, about 40 miles south of the works. The ore contains 63 per cent of iron, 8 per cent of manganese, 0.01 per cent of sulphur, 0.09 per cent of phosphorus and 2 to 3 per cent of silica.

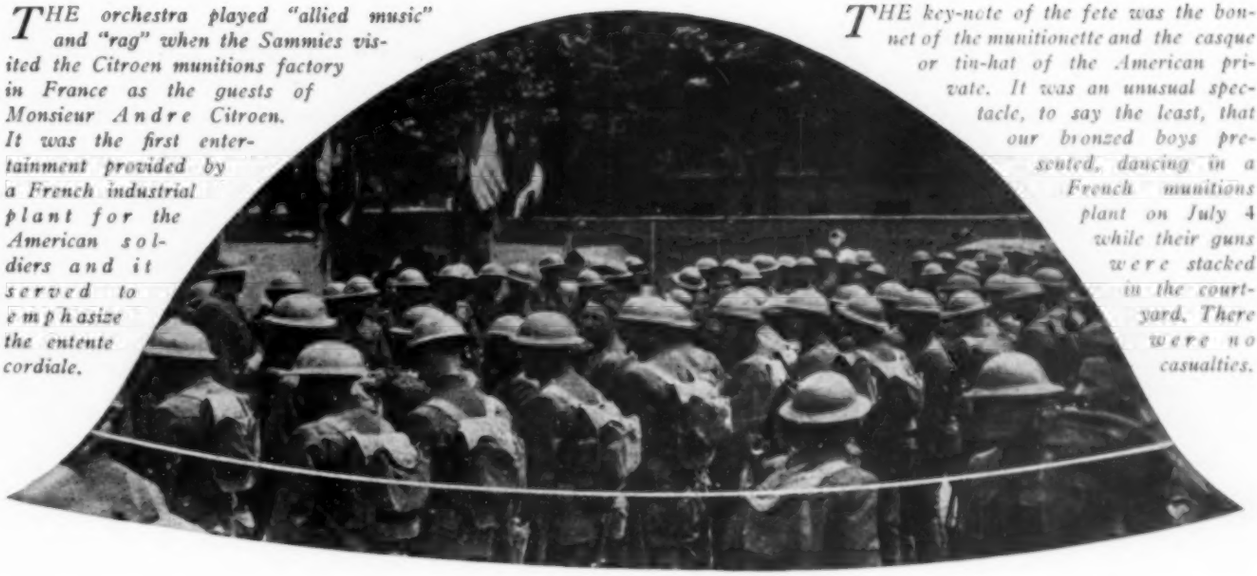
### *Many Experiments Tried*

The staff of the open-hearth department until a short time after war broke out was German and not particularly efficient. They favored running the heat down to a minimum carbon content and recarburizing with coke dust. The coke dust used has a high content of ash is not a good carburizing agent, but the author tried several experiments and proved that when properly handled the method is capable of producing satisfactory steel. As carried out by the Germans the method was not a success, and the losses were so great the closing down of the steel plant had been decided on. At this stage the author put the Indian heavy steel industry on sound practical lines of steel manufacture and others then worked out the labor and commercial side, and got it on a good business footing before the war. Since then the profits have been sufficient to wipe out the cost of all past mistakes and to place the firm in a stronger position than it was before.

The author started to install his methods in August, 1913. Failure with the men available was prophesied, but by this time a young American of great energy, Lansing W. Hoyt, had been given charge of the steelmaking department, and he worked at the new process with great enthusiasm. The Germans showed no sign of resentment, until they were interned, but on the contrary were anxious to pick up every point, understand it, and apply it. One advantage of war is that it spurs us on to make the best use of the material we have, and we can turn our experience to good account in the good days to come after peace returns.

From a paper prepared for the British Iron and Steel institute. The author, Andrew McWilliams, is metallurgical inspector for the government of India munitions board.

*THE orchestra played "allied music" and "rag" when the Sammies visited the Citroen munitions factory in France as the guests of Monsieur Andre Citroen. It was the first entertainment provided by a French industrial plant for the American soldiers and it served to emphasize the entente cordiale.*



*THE key-note of the fete was the bonnet of the munitionette and the casque or tin-hat of the American private. It was an unusual spectacle, to say the least, that our bronzed boys presented, dancing in a French munitions plant on July 4 while their guns were stacked in the courtyard. There were no casualties.*

# Yanks Feted in French War Plant

BY FRANCIS MILTOUN

*Paris Correspondent of The Iron Trade Review*

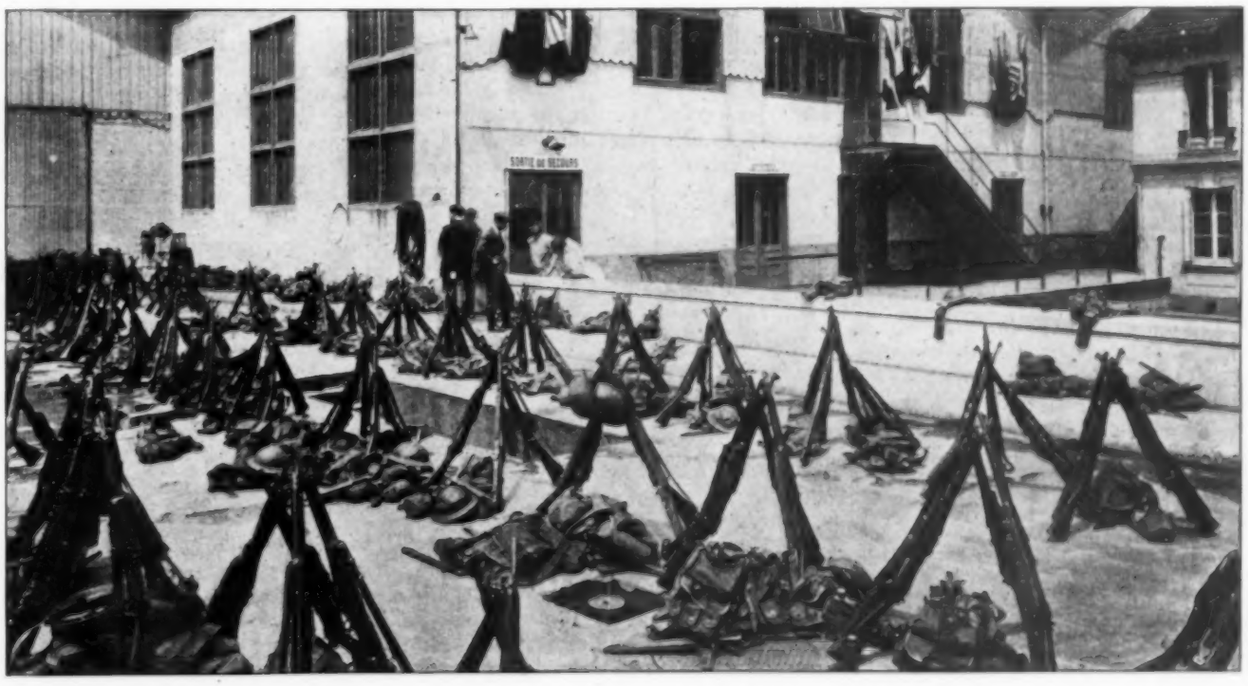
9 Rue Falguiere, Paris,
July 15, 1918.

UNIQUE event in interallied annals of the metallurgical industry has just taken place in France. It was at the Citroen factory, not in Paris—this in conformity of the expressed wish of the military censor—one of the world's industrial war-time marvels.

Monsieur Andre Citroen sought to mingle his men and women workers with the American soldiers, who, on July 4, fresh from their laurels on the fighting front but two days before, had come on his invitation direct from the parade which they had just taken part in in Paris.

Their French brothers were astonished at the Americans, so alert, so keen and so well drilled and officered. Their arms and accoutrements were stacked in the courtyard when 300 of them partook of genuine French hospitality and mixed with the Citroen foremen and workmen and women employes in an informal Franco-American banquet, served by the women employes. Each wore a *bout de ruban tricolore et etoile*, a

(*Concluded on Page* 448)



YANKS' GUNS STACKED IN COURTYARD OF CITROEN WORKS, THE GREAT FRENCH MUNITIONS PLANT

# Industry Forges Ahead Despite War

## American and English Manufacturers of Machine Tools Form Syndicate to Combat in France Any Future German-made Goods of a Competing Nature—France Adopts Standardization—New Industry Created in Spain

*(Special Correspondence)*

PARIS, July 25.—Direct representatives of American and English machine tool manufacturers in Paris recently have formed a syndicate for trade purposes. The founders of this chamber of commerce are:

The Fitchburg group, represented by M. Fogarty; Hounsfields, represented by Mr. Hounsfield; Cope & Simon; E. W. Bliss & Co.; Allied Machinery Co. of France; Ingersoll-Rand Co., represented by F. A. Choffel; Herbert Morris Co., represented by J. H. Hartley; Alfred Herbert Ltd., represented by L. J. Kay, and Arnold Wicksteed & Co., represented by M. A. Wicksteed. This new organization has for its object the defense of its collective interests relating to all commercial, industrial and financial questions bearing upon the direct representation of American or British manufacturers who may be members, in France. Members may be recruited among those manufacturers of the allied powers who are direct representatives only and who are using in their business capital wholly allied or neutral.

It is intended that all members will thus be vested with an authority and competence based upon the reputation of their products and that of their firms. The organization is the outcome of a French decree which authorized the foundation, April 14, 1918, of a Comité Francais des Machines Outils et de l' Outillage Mecanique, and of which the composition specifically excludes any importers thereof. It is not considered that this latter move on the part of the French government in any way controverts the individual or combined efforts of British and American manufacturers or their representatives, but is projected wholly on behalf of stopping any after-the-war flow of German-made goods of a competing nature which may pass through a neutral country.

* * *

*Controls Bolts and Screws*

By a decision of the French minister of war a control of the bolt and screw trade has been inaugurated. This covers all products included under the French generic term of boulonnerie, namely, bolts and nuts, square and round headed screws, keys and rivets of iron or soft steel, screw eyes, hooks, etc. In consequence no orders may be accepted by the manufacturers without first having received authorization from the proper bureau.

Orders are to be made out in quadruplicate giving specifications of the article and the approximate weight of the metal which will be required for their completion. Upon acceptation it will be returned properly vised. The prime object is to prevent a duplication of orders and of the placing of orders with any manufacturer who may be already overcrowded when others may be in a position to proceed with the order at once. This in turn makes for a more prompt delivery, the more equitable division of the business and in all probability will be the means of arriving at that specialization of work which by labor conditions and equipment one establishment is more capable of turning out than another which may lack these facilities.

* * *

*Movies Bring Orders*

It was only a side light thrown on the screen of a Paris cinematagraph the other day, but it was a veritable golden ray for a manufacturer of a certain machine tool. It so pleased a French manufacturer in the audience that he sought out its origin—which proved to be American—and thus laid another laurel on the crown of the goddess of advertising. It appears that in one of the "Reviews of the Week" a Parisian cinema agency presented a film which showed this highly perfected machine drill in operation. It was but the work of a moment to get the name of the manufacturer, which had been omitted in the French translation of the caption, from the office of the movie magnate. The sequel is that the manufacturer in question immediately took steps to get his permit of importation from the shipping board and doubtless the machines which he ordered may be on the ocean by now. This suggests that the industrial movie has altogether a virgin field before it here in France. In 15 years I have not seen a half a dozen films of any kind which purported to do anything but amuse. It might be well for our manufacturers to work out some system of peaceful penetration and follow-up system after the war along these lines.

* * *

*Spain Holds Manganese*

For years before the war, and extensively since the war, largely through the influence of the former Spanish premier, Conde Romananos, a friend of the allies and a large mine owner himself, Spanish ores were shipped out of the country in their crude state to England and to France. The war has now created a new industry in neutral Spain. According to the Diario Universal of Madrid the Spanish iron industry is making extensive plans to treat its manganese iron ores on the spot. Already it has furnaces in operation which are giving a return of 81 per cent in pig iron, which is considered to be at least 8 per cent more than the best processes in England commonly produce.

* * *

*Form New Spanish Concern.*

There has recently been founded at Madrid the Spanish Electro-Mechanical Construction Co., with a capital of 25 million pesetas, of which but half has as yet been issued publicly. Its home office is at Madrid and it is an affiliation of notable Spanish, French and Belgian metallurgists. Among the principals interested are the Rio-Tinto group, the wealthy Franco-Belgian group and notably also the society which at present controls the Forges et Ateliers de Longueville, a large proportion of the capital of which is in the hands of the Etablissements Schneider of Le Creusot.

* * *

*Italy Standardizes Practice*

Italian metallurgists, following in the footsteps of their American and British colleagues, are at present engaged upon a scheme of standardization which shall tend to reduce the number and variety of types and dimensions of construction in iron and

steel. The Italians have thus come to be the first of the Latins who have recognized the economy of time and labor and financial investment required to meet the present and after-the-war contingencies to assure an increased production. Another important aspect is the economy of releasing labor to produce along other economic lines in the general reconstruction of industry which is bound to take place in the near future in all the world.

* * *

*Employes' Delegates Talk.*

When the first mobilization of labor in the metal and other trades took place in France upon the outbreak of war, the French government automatically took upon itself a certain amount of paternalism tending to expedite production and in some small measure to care for the well-being of the workmen and workwomen. The latter since that time have penerated into trades—particularly the metal trades—to a degree never before imagined. In addition to this government supervision there soon grew up a need of an equal cooperation on the part of the delegates of the workers themselves. Then came into being the "workshop delegate"—the "delegue d' Atelier." The directors did not receive the new idea with good grace, as may be well imagined, but Albert Thomas, then minister of munitions, approved of it and the workmen of the factories were privileged to appoint their own delegates to take charge of their interests and well being. This provided a sort of mouthpiece through which claims might be presented to the authorities of the government and to the directors of the establishment in case of need. The delegate was named the "advocate of the workmen". The trades unions and syndicate officials saw their powers diminishing, for the man on the spot, rather than a mere walking delegate strolling about from one factory to another, was able to do things, or at least learn quickly that there was no need of their being done at all.

The whole thing is getting into the public prints and the discussions in public places these days to the detriment of the service. The "workers' delegate" is supposed to be classed with the "secret professionelle", the French term applying to the function of the doctor and the lawyer. He is not supposed to discuss outside the atelier any of the questions which may have arisen in the exercise of his functions. Mr. Loucher, the minister of armament, has effectually put a stop to this phase of the question by claiming that the delegate is a sort of chairman of an official government committee and is responsible only to the government and that something more than professional secrets are violated if he does more than attend to business during the day and forget when it comes night all that has passed in the factory to which he is accredited.

There the matter stands, but Mr. Loucheur is a mighty man with a mighty task on his hands and has committed himself emphatically of the dictum that "it can not be admitted that the factory delegates can be in the slightest degree sidetracked from the prerogatives which are bestowed upon them by those responsible for the national defense." This limits the factory delegate to a useful labor in itself performed where it was designed that it should be performed and never discussed in public. This is but another expression of the paternalism of the French government in all things.

* * *

*Labor Granted Exemption.*

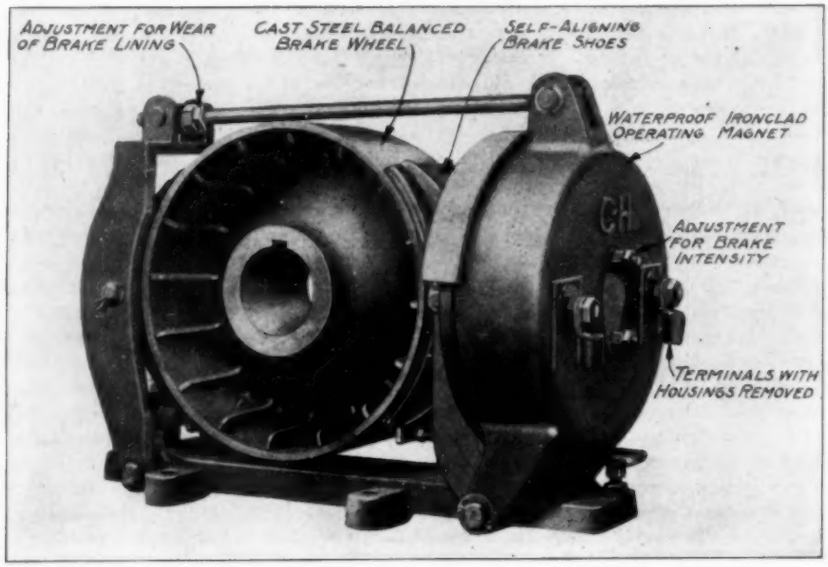
The matter of labor exemptions among the conscript soldiery of France has ever been a matter of pre-occupation since the first days of the war. The procedure has been less elaborate than that which has been in vogue in England. Perhaps it has been less effective, but the fact is, it has been recognized that the specialist in the factory, assisting at the birth of the gun, so to say, is quite as much a factor in victory as the man behind the gun. Female labor cannot take entirely the place of male labor. There is another aspect to this question in France. The French workman does not want any too great an insinuation of female labor, in the belief that this same effort will make all the more impossible his earning an adequate livelihood when victory is won.

French military exemptions, aside from those of the auxiliary services back of the lines or on special detail, the latter largely officers, may be considered as confined to six classes. Those who may be employed for the intendence, in the manufcature of munitions and armament, shipbuilding, or other specialties of the national defence; those who run the railways and ships and shipping and consequent *ravitaillement;* those upon whose services depend the posts and telegraphs, etc.; those who are engaged specifically in intercolonial and mother country relations; those, of a certain limited class, who may be engaged in keeping up the prestige of France in foreign countries. There may be other minor classes entitled to temporary exemptions but these are the broad lines, and today after four years, nearly, of war, the system has worked with so little friction that there has been little criticism from any source.

Exemptions are classed as permanent or temporary, and the latter may be renewed as frequently as the need may be found to exist. Another class independent of those who may be specifically working for the government account should be mentioned and that is the agricultural class who benefit at the periods of sowing and harvesting. All these exemption permits go through a rather complicated formula of a regional inspection committee as well as the branches and administrations of government departments directly concerned, but the system is not so complicated as it looks nor has it showed any weak spots in operation. The only real setbacks which it may have had are those which may have been caused by the exigencies of a military offensive on one side or the other keeping men in the trenches when the propitious moment might have arrived when they could be used to the best advantage in the fields. This is what we call "Act of War" when we write it into contracts or insurance policies; the French, quite as expressively, call it *force majeur.*

## Magnet Operated Brake

Lowering the position of the magnet and making the magnet armature an integral part of one of the arms carrying the brake shoes, greatly simplifies the construction of magnet-operated brakes, inasmuch as fewer parts are required, compactness is secured, and the parts made strong and rugged without adding excessive weight. The magnet brake shown in the accompanying illustration was built along these lines by the Cutler-Hammer Mfg. Co., Milwaukee. The brake requires little head room as it is slightly higher than the brake wheel. The brake is applied by means of a spring, placed in the center of the coil, which tends to force the armature and magnet apart. The force acting directly in line with the center of the brake shoes, does not effect the operation by any wear in the brake linkage. The retarding torque exerted on the brake wheel is the same in both directions of rotation. The magnet is of the iron-clad clapper type. It operates on a small air gap which increases the efficiency of this type of magnet and due to the projection on the outer pole is quiet in


ADJUSTMENT FOR WEAR OF BRAKE LINING
CAST STEEL BALANCED BRAKE WHEEL
SELF-ALIGNING BRAKE SHOES
WATERPROOF IRONCLAD OPERATING MAGNET
ADJUSTMENT FOR BRAKE INTENSITY
TERMINALS WITH HOUSINGS REMOVED

ARMATURE AND MAGNET ARE BOTH MOVABLE AND ROTATE ON THE SAME CENTERS

operation. By reference to the illustration it will be seen that the armature and magnet are both movable and rotate on the same centers. This construction reduces the angular movement of all bearings to less than one degree, making the wear negligible. This also eliminates the side friction. The brakes are made in standard sizes varying from 8 to 30 inches in diameter, and from 15 to 300 horsepower capacity.

## Reduction of Accidents

A paper published by the bureau of mines on accidents at metallurgical works, shows a gratifying reduction in fatal accidents at both smelters and ore-dressing plants. The nonfatal injuries show an increase caused not so much by an increasing hazard as by the more complete returns received. The figures cover the returns from 150 smelting plants, and include copper, lead, zinc, and quicksilver smelters, as well as refineries. The ore-dressing plants represent concentrating plants for copper, lead, and zinc ores, stamp mills, cyanide plants, and iron ore washers. The total number of men reported employed in the metallurgical plants, both smelters and ore-dressing plants, was 66,194, as compared with 49,891 in 1915, and 43,007 in 1914.

The number killed in the ore-dressing plants in 1916 was 33, or 1.41 per thousand 300-day workers employed, as compared with 30 in 1915, when the fatality rate was 1.57. The total number of injuries in 1916 was 3184, as compared with 2095 in 1915.

In 1916 the number of men killed at smelting plants was 36, or 0.73 per thousand 300-day workers, as compared with 1.05 per 1000 in 1915. There were reported 9656 injuries, or 195.61 per 1000.

Auxiliary works are intended to include machine shops, carpenter shops, yards, and general construction, all of which though a part of the metallurgical plants, should not be included in the actual operating departments. The returns for 1916 show 14,007 men employed, with 14 fatalities and 2240 injuries. Reduced to the 300-day basis, this represents 15,763 three hundred-day workers, with a fatality rate of 0.89 and a nonfatal-injury rate of 142.10 per 1000. Fifty per cent of the fatalities were due to falls of persons, and falling objects, and 29 per cent of the nonfatal injuries were due to the same causes.

Six per cent of the fatalities at ore-dressing plants were due to falls of persons, whereas at the smelters the fatalities due to falls of persons represented 25 per cent of the total. Fatalities due to flying or falling objects represented 11 per cent at smelters and 3 per cent at ore dressing plants.

Haulage systems caused 17 per cent of the fatalities at smelting plants and 21 per cent at ore dressing plants. Six per cent of the nonfatal injuries at ore dressing plants were due to haulage, whereas at smelters 10 per cent were due to this cause.

At smelting plants burns from hot metal, slag, etc., claimed 11 per cent of the fatalities and 25 per cent of the nonfatal injuries.

# Designs Self-Contained Ladle Tilter

DURING the past few years many iron and steel companies have adopted the 50-ton ladle for transporting hot metal from their blast furnaces to their bessemer and pig machine departments. Companies manufacturing tilting devices soon realized that, in order to keep ahead of the progress made in handling pig iron, heavier type tilters would have to be designed. With this in view the Pittsburgh Coal Washer Co., Pittsburgh, set their engineering staff at work designing a tilter which would handle a 50-ton ladle or one even larger if necessary. Their efforts are shown in the accompanying illustration.

The tilter is supported on a curved base which rocks forward on pedestals when the ladle is being tilted. The base is made of two heavy steel castings having teeth which engage in the pedestal. The latter is provided with anchor bolts which hold it securely to the concrete foundation. An electrically-driven hoist is built onto the pedestal and is connected through ropes arranged in the ratio of 6 to 1 to a chain. The latter passes over a head sheave.

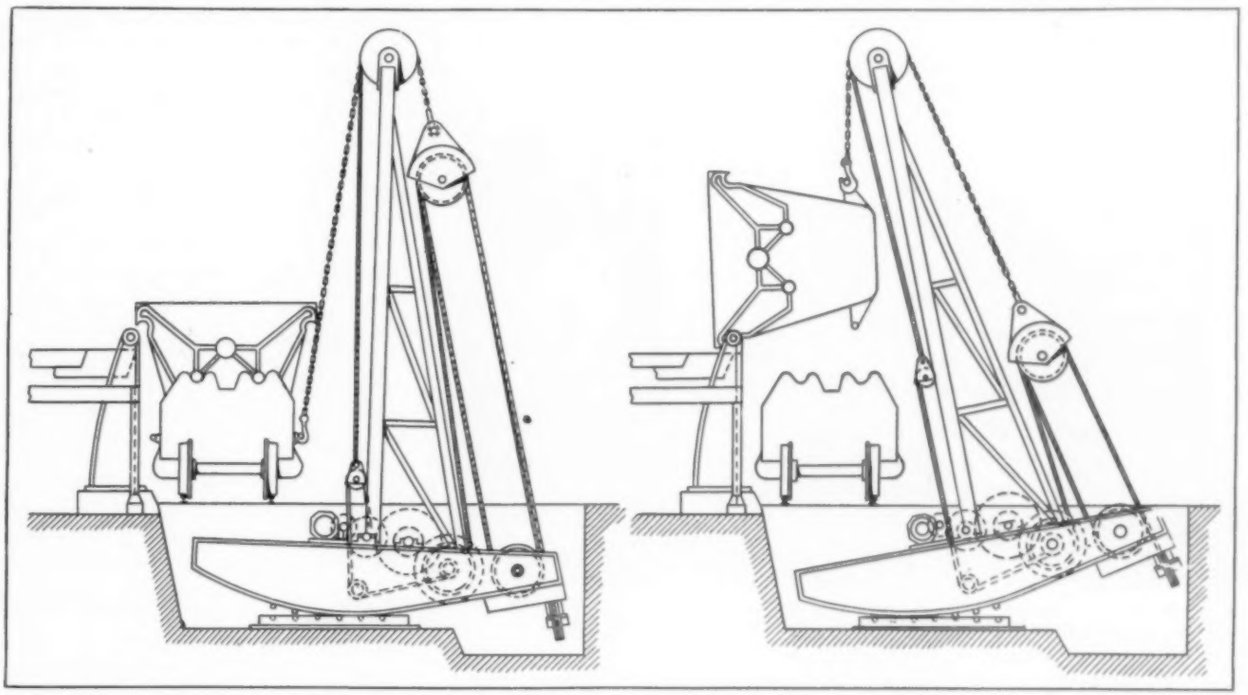
### *Vertical Lift for All Positions*

When no load is to be lifted the hoist assumes a position of equilibrium with the main supporting columns approximately in a vertical position. When starting to tilt a ladle the application of the load tends to rock the structure forward on its curved base. This brings the point of support under the center of gravity of the structure and load, and gives an approximately vertical lift on the ladle for all positions of tilting. The hoist is driven by means of a 15-horse power motor. The latter is connected through four spur reduction gears to a drum, 36 inches in diameter. A dynamic braking drum controller is provided with grid resistance for 90 per cent speed reduction.

An automatic electric brake which is designed to hold the full load of the hoist is also provided. It is mounted on the armature shaft of the

motor and operates in such a manner that should the supply of current fail from any cause, the brake would immediately engage and prevent the load from running down. The hoist has a capacity of 100,000 pounds on the hook and at this load the lifting speed is four feet per minute with speed control of five inches per minute. The hoisting rope is made of 12 strands of ⅞-inch plow steel. It is coiled on a 36-inch drum made with right and left scores. The sheaves are 36 inches in diameter and are equipped with bronze bushings. The upper sheave block is connected by means of a shackle to a 2¾-inch crane chain, the free end of which is fitted with a forged-steel hook. The chain sheave is mounted on an 11-inch shaft which operates in bronze-bushed bearings.

A sheave balance is provided for balancing the upper sheave block when no load is on the hook. This consists of a rope which is coiled on a small auxiliary drum. The latter is mounted on the main drum shaft. The rope is passed to a suitable block arrangement. This block is connected to the upper sheave block by means of a separate rope which passes over a groove on the chain sheave. All gears are made of cast steel and are protected by means of guards and cases. The pinions are either cast or forged with cut teeth. The main columns are made from 10-inch, 54-pound I-beams. They are set into the base castings and securely braced to stand heavy strains.



SELF-CONTAINED LADLE TILTER READY TO START POURING AND IN EXTREME POURING POSITION

## New Type Self-Recording Potentiometer

Many prominent manufactures of munitions and high-grade steels in order to have their heat-treating furnaces under ready control have installed a central pyrometer station where an attendant records the various temperatures and notifies the furnace operators by means of signal lights if the temperatures fall below or rise above those required. Probably the most precise electrical measurements are those made by a zero or balance method, such as the Wheatstone bridge and the potentiometer. In both no current flows through the galvanometer at the moment when the measurement is made and hence galvanometer errors are excluded. In the potentiometer, variations in the resistance of lead wires and of the source of electromotive force, such as a thermocouple, are also eliminated, the lead wires and thermocouple being in the same circuit with the galvanometer.

Zero methods, however, require external power for the balancing of the circuit. For single measurements this power is ordinarily supplied by the hand; a contact is moved along a slide wire or resistances are plugged in or out until the galvanometer comes to the zero position, when the quantity to be measured is at once known from the amount of resistance that has been used. The Leeds & Northrup Co., Philadelpha, has developed power-driven recorders in which the adjustments are made automatically, the galvanometer merely determining in which direction the adjustment is to be made.

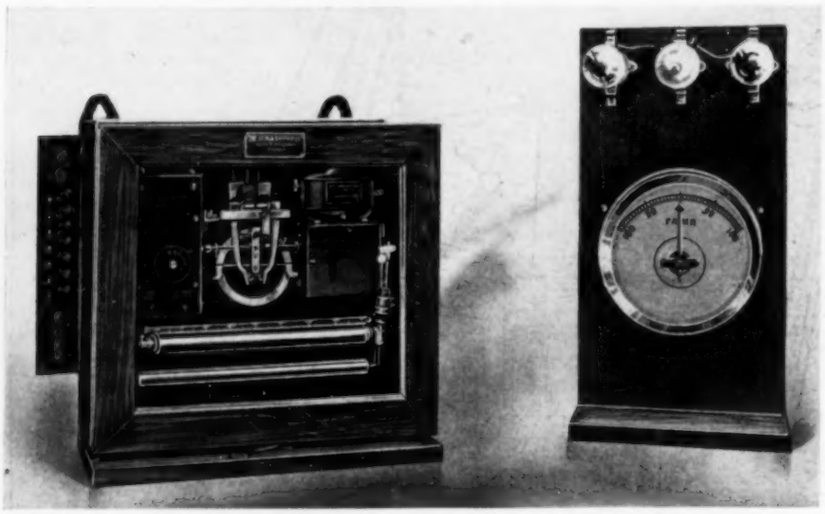
Early attempts to use a galvanometer for this purpose were along the line of having the boom or pointer of the galvanometer close an electrical circuit. This, however, proved unsatisfactory, as with low voltages on the boom, contact would not be made through particles of dust, while with a higher voltage the boom would "freeze" or fuse to the contactor. In the recorder shown in the accompanying illustration the boom serves merely as a mechanical trigger. A reciprocating part, kept in constant motion by a motor, is arranged not to strike the boom when the latter stands in the no-current position, but when the boom moves out of this position in either direction, the reciprocating part pushes it against another part which adjusts the bridge or potentiometer circuit, the amount of the adjustment being regulated according to the distance which the boom has swung, that is, to the unbalancing current through the galvanometer.

The power of the motor is sufficient, not only for making the adjustments, but also for the operation of the chart drum or roll. For this

purpose, however, the motor must run at a constant speed to give good time-keeping qualities, since the abscissae of the chart are laid off in hours and minutes. This has been found to necessitate the use of a special governor. The latter is of the centrifugal type and operates by opening and closing a shunt in the field circuit. When the motor is in operation this contact is continually on the make and break, as may be easily detected by listening to a telephone receiver connected in the circuit.

*Application of Motor*

The motor not only adjusts the movable contact of the bridge or potentiometer, but also supplies power to move the recording pen. In multiple recording instruments which will record for a number of different thermocouples or resistance thermometers the motor operates the selector switch. The latter connects the recorder to the different circuits and simultaneously turns a printing wheel which impresses upon the record sheet a dot to record the reading, and a number to identify the individual circuit under measurement.



CURVE-DRAWING RECORDER OF THE POTENTIOMETER TYPE

In the heat treatment of metals, it is becoming more and more the practice to bring the leads from thermocouples in different parts of the furnace and in different furnaces to a central control station. That is facilitated by the introduction of base-metal thermocouples, which permits the prolongation of the couple itself to the measuring instrument, where the effects of temperature upon the cold end of the couple are readily compensated for. It is also facilitated by the adoption of the potentiometer method of measurement, which which differences in resistance of lead wires become immaterial. An attendant at the control station uses an indicating instrument, which he connects successively to different thermocouples. Usually he is also provided with switches, by means of which he can light signal lamps for the guidance of the operators at the furnaces.

Where it is preferred to have the signalling at the furnace done automatically, single-point or curve-drawing recorder is provided with contacts on the moving element by means of which the signal lamps will be lit, accordingly as the temperatures in the furnace are too high, too low, or correct. An interesting extension of this plan is to use two thermocouples in different parts of the furnace and to provide the recorder with a commutator by means of which it reads first on one and then on the other. The chart produced is a single line running alternately back and forth between the two temperatures and indicating the temperature difference graphically. At the same time the commutator controls a fourth signal lamp at the furnace to show which thermocouple is being measured.

*Various Uses of Recorder*

The double recorder is thus suitable for demonstrating uniformity of furnace temperatures—or the lack of it. It shows graphically the effects of empty furnace, full furnace, or part full furnace, and how distribution of heat is affected by rates of firing, location of load, door and other losses, cold hearth, etc. It is a convenient means for investigating furnaces and showing how errors may be overcome by moving burners, baffles, or arches, or changing the method of introducing heat, as by the use of side burners, underfiring, overfiring, number of burners, position of doors, etc. It also shows definitely the effects of location of thermocouples, how the readings vary according to their placing with respect to the work and the burners, also the number of couples to be used in a given furnace, etc.

The use of this double recorder has exploded the old soaking heat idea, since it demonstrates that it is practically impossible to bring many kinds of loads up uniformly to the desired temperature by holding the furnace at a constant temperature, without underheating some parts, and overheating others. This type of equipment has been found of especial value in studying the heating of different kinds and sizes of sections or numbers of pieces, different methods of loading, speed of loading and unloading, mechanical furnacing, the heat treatment of large single pieces, such as gun forgings, etc.

## Yanks Feted in France

(*Concluded from page* 443)

tricolored, star spangled decoration.

The factory orchestra played "allied music" and even "rag." The captain in command of the American force made something more than an ordinary successful speech, which was responded to by Monsieur Citroen.

Each American had on either side a French workman, who knew a little English. This produced a happy commingling and a warmth of cameraderie which the world would hardly have thought possible five years ago.

After the repast the orchestra struck up a waltz, a two-step and a Boston, and the American lads derated the rest of the afternoon to dancing with the munitionettes.

This was one of the first expressions of real taking-to-the-bosom of the American soldier by any industrial enterprise in France. The idea was worthy of the head of this great French war factory. The key-note of it all was the bonnet of the munitionette and the casque, or "tin-hat" of the American private.

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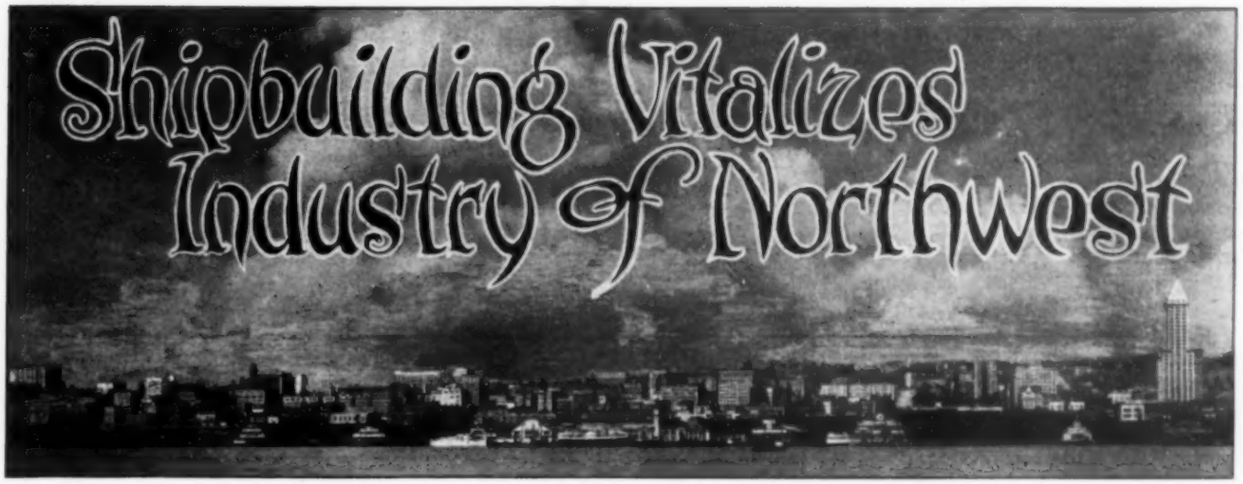
Freyn, Brassert & Co., consulting engineers, Chicago, have been retained by Leflaive & Cie., (Anc.*ns* Etablissements Bietrix, Leflaive & Cie.), La Chaleassiere, St. Etienne, France, to design rolling mill equipment.




# Plants Promised Material, Plead for Men

SEATTLE, Aug. 15.—The recent visit of Charles M. Schwab, director general of the Emergency Fleet corporation, and associates, to the Pacific northwest has further stimulated the industrial growth of the section. An element of greater stability also has been added by Mr. Schwab's assurance that yards in this district will be kept constantly busy in the construction of steel and wood ships.

The promise to the steel shipyards that steel will be rushed to them as fast as needed accounts for increased activity and this will mean larger payrolls and greater housing facilities. The question of housing is a greater problem for Seattle than for most northwestern centers because the yards have greater capacity for construction and Vice President Piez, of the Emergency Fleet corporation, has informed the city that it must solve the problem without the aid of the government.

Now a drive has been started to provide accommodations for workers who are expected to arrive before 1919. It is estimated that from 10,000 to 12,000 will reach the city this fall, although it is admitted by those in a position to speak that great difficulty will be experienced in obtaining this additional number because of the labor shortage in the northwest. The chamber of commerce and Commercial club, alive to the fact that unless homes can be provided the government must award contracts elsewhere, is preparing to make a campaign similar to those made for the Red Cross, Liberty loan and other war projects. The mayor has issued a call to the owners of unimproved lots suitable for residence and apartment buildings to assist in solving the housing problem.

A few days after the Emergency Fleet officials departed, J. D. Ryan, federal director of aircraft production, arrived in behalf of that important arm of the service, highly pleased with present output but calling for a 100 per cent increase. The lumbermen were quick in responding and apparently the northwest is to see remarkable speed in turning its great resources of spruce into an effective weapon for winning the war. Production of 1,000,000 feet of spruce a day has become the slogan. As an indication of what may be expected, the cutting plant at Vancouver, Wash., is now turning out 900,000 feet a day and shipping 600,000 feet of perfect aircraft lumber every 24 hours. Forty miles of railroad are being constructed on the Olympic peninsula to open up a spruce belt from which it is proposed to procure 300,000,000 feet within a year. The northwest supplied the government 1,500,000 feet of spruce a month in 1917 but the production has increased to 15,000,000 feet a month. It can readily be seen what it will mean in the way of labor and expenditure of money to increase this to 30,000,000 feet a month and keep it up indefinitely.

Aside from the great proportions which shipbuilding has attained, the northwest's greatest single asset is being developed to a degree never dreamed of before.

As an instance of what the Emergency Fleet corporation expects of the northwest in ship construction, during the week ending July 13 a contract was awarded to the Skinner & Eddy Corp., Seattle, for 35 steel cargo steamships of a dead weight tonnage of 332,800. On July 16 Seattle had delivered 26½ per cent of total new tonnage completed and delivered to the shipping board 217,300 deadweight tons, while the port held contracts for $250,000,000. This represents only a portion of the shipbuilding activity in the northwest, as Tacoma and Portland each have great steel and wood yards and the Standifer Construction Corp., operating a steel yard at Vancouver, has been compelled to erect a veritable city to house its employes.

Erection of foundries, machine shops and other industrial works, and plans for proposed plants continue to occupy an important place in announcements from various points in the territory. The Northwest Motor Co., Seattle, organized by local capital, will cast iron and steel, having leased a site from King county. The enterprise will represent the expenditure of $150,000. The main foundry building will be 90 x 250 feet and equipped with an iron melting cupola, an electric steel furnace, etc. The Patterson-MacDonald Shipbuilding Co., James W. Black president, Seattle, has started construction of a foundry and machine shop at its plant. The company recently purchased the Joseph Silver Machine Works, Salt Lake City, and is moving the plant to Seattle. The Patterson-MacDonald Shipbuilding Co. is constructing large wooden full-powered steamships for the Australian government. The Rand Iron Works, Vancouver, Wash., is having plans prepared for a brick and steel foundry building, 30 x 81 feet, to be added to its present plant. The Lamb Machine Co., Hoquiam, Wash.,

Frank H. Lamb, president, is to spend $50,000 in the erection of a steel foundry to have a capacity of 10 tons of steel and 5 to 6 tons of gray iron castings per day. At Portland the Willamette Brass Foundry is to erect a 50 x 90-foot foundry. Robert Gray, formerly with the American Bronze & Brass Works, is at the head of the new concern. The Specialty Foundry & Machine Works Co., in that city, has installed foundry equipment with a capacity of 5 tons an hour, also a brass, bronze and alloy furnace of 500 pounds a heat capacity. The United Steel Co., which is erecting a 100 to 150-ton capacity rolling mill at Everett, Wash., will begin operations some time in October. The mill will turn out commercial rolled bars of all shapes and sizes. Twohy Brothers, car builders, Portland, are to enlarge their plant by constructing new sheds, trackage and equipment at a cost of $100,000. This company has just built 400 freight cars for the Northern Pacific railroad and has a contract with the government for 1000 box cars. Other foundries are being considered but in view of the shortage of pig iron, steel and iron scrap and trouble experienced in obtaining labor, difficulties are looming upon the horizon. The scramble for men and materials undoubtedly will interfere with output and call for regulation in the near future.

### *Scrap Buyers Make Agreement*

For some time the scrap situation in Washington has been troublesome, scrap dealers asking and receiving prices much in excess of government price. California and Oregon made an adjustment some time ago and an agreement has now been reached between the Seattle Foundrymen's association in co-operation with the foundrymen of the state of Washington at a joint meeting of subcommittees representing each party. This agreement is based upon the government price and its provisions are as follows:

First: It is agreed that all trading in scrap iron shall be done only at prices not in excess of those fixed by the subcommittee on scrap iron and steel of the American Iron and Steel institute as approved by the President of the United States.

Second: All cast iron scrap shall be classified into four grades as follows:

First grade shall consist of cast iron scrap of first quality which possesses evidence of having been machined, such as planed or turned surfaces bored or drilled holes, etc., broken railroad car wheels conforming to the Master Car Builders' association's standards, building columns and agricultural scrap all to be broken to cupola size, no piece to exceed 150 pounds in weight. Maximum price to be $34 per gross ton.

Second grade shall consist of miscellaneous cast iron car wheels not included in the first grade building castings such as post caps, bases and lintels, municipal scrap, such as street water and gas main castings, journal boxes and plain cars and railroad castings not machined, cast iron radiators and soil pipe and soil pipe fittings, bridge and structural castings, and other plain gray iron castings not machined or not showing a white or mottled fracture when broken or elsewhere mentioned in these classifications. All above to be bropen to cupola size. Maximum price to be $32.50 per gross ton.

Third grade shall consist of brake shoes, bridge washers and separators. Maximum price, $29 per gross ton.

Fourth grade shall consist of cleaned stove plate free from malleable iron and steel part grates, burnt iron or other miscellaneous scrap usually collected with this material. Maximum price, $28 per gross ton.

Third: It is agreed that should scrap for any above classifications be not broken to cupola size the maximum price shall be $5 per gross ton less than above schedule.

Fourth: It is agreed that the foundrymen will pay not to exceed the above maximum prices only to recognized dealers whose lists of names are hereto attached or who may be added to list from time to time by joint committee of Seattle Foundrymen's association and Washington State Scrap Iron Dealers' association and railroad or other industries controlled or operated by the United States government.

Fifth: All prices are to be f.o.b. car consumers' spur, track or at consumers' usual point of receiving scrap. All charges, including war tax, to be paid by the seller. Inspections to be performed by purchaser and all expenses incident to rejection to be borne by seller. All rejected material to be solely at the disposal of the seller, after written notice of rejection.

Sixth: This agreement to go into effect immediately and is to remain in force while prices are regulated by United States government. These prices are maximum and are to be changed from time to time as maximum prices are changed by the government.

Dated this 30th day of July, 1918, Washington State Scrap Dealers' association, by committee, Frank Schwartz, chairman, M. Neider, Joseph Sussman, A. Krom. B. Kahan: Seattle Foundrymen's association, by scrap committee, F. G. Frink, chairman, W. A. Letcher, W. R. Tompkins, John Hartman, G. B. Gimmel.

### *No Change in Price of Castings*

There has been no change in the price of castings the past month in either iron or steel, iron castings running slightly above 7 to 8 cents and steel castings slightly above 10 to 45 cents.

Herbert Witherspoon, Spokane, banker and manufacturer, recently appointed by Charles A. Otis, chairman of the resources and conversion division of the war industries board, to take charge of the work in the twentieth zone, embracing Oregon, Washington and Idaho, has established offices in Seattle.

An event which will have direct bearing upon the industrial situation at Seattle is the fact that the city has just been authorized by the capital issues committee to sell $5,500,000 in bonds for construction of a 35,000-kilowatt hydro-electric plant on the Skagit river to serve war industries. Demands for power for new plants has been greatly in excess of what the present city equipment can supply.

There is a large amount of port development in the northwest either under way or proposed. The record of the port of Seattle for the first six months of 1918 is 669,000 tons, valued at $216,500,000 and from which the port received in excess of $1,000,000 in gross revenues. Large sums of money have been expended in bringing the terminals to a state of perfection. Preparations are being made to construct what is claimed will be the largest terminal in America at Smith Cove in Seattle. This pier will be 2700 feet long and have berthing capacity for 30 vessels. A bond issue for $2,500,000 will be submitted to the voters Sept. 10. The city of Everett, Wash., has formed a port district to provide for future emergencies. Portland is spending $1,500,000 in constructing a pier and grain elevator.

### *Export Trade Curtailed*

The export trade in steel and iron is much curtailed. About the only thing moving at present is a small amount of steel bars made from discard shell billets. One firm reports a sale of 200 tons at 3.80c, Pittsburgh, freight 85 cents per 100 pounds to Seattle but quotations are now running around 4c. Some sales have been made as low as 3.50c, Pittsburgh. A small amount of refined iron bars are being sold for export at 3.50 to 3.75c, Pittsburgh, freight 85 cents to Seattle. A couple of carloads of cast iron pipe were recently sold by a dealer in Seattle at $79 which would make it about $64, Birmingham. The demand is small on account of the price and wood pipe is being used in its stead.

No quotations are being made on brass and copper tubes at present except quotations for delivery six months hence, prices to be determined at that time. On bolts and nuts all freight allowances have been discontinued.

# Shoot Strikers! British Unions Cry

## Organized Labor Rebukes Self When Unions Denounce Their Brethren in Birmingham Munition Plants for Walking Out—Fuel Scarcity Still Pressing—Higher Prices Asked for Finished Products

### Labor Condemns Strikers to Trenches

*ORGANIZED labor in England has become so greedy that it has gagged itself. Following the big strike in the Birmingham industrial district in July unionism administered a severe lashing to itself. While union workers in the war plants walked out their brethren denounced them as traitors to the country and adopted resolutions rebuking them for their alliance with the kaiser. Workers of all classes at the Woolwich arsenal sent the following resolutions to Birmingham:*

*"This mass meeting of engineers and workers of all grades at Woolwich arsenal agree heartily that you have cause for just complaint in the present conditions brought about by the stupidity of the ministry of munitions, the profit-snatching policy of the masters' federation, and the abominable influence of the pacifist pro-German shop steward leaders in your midst.*

*"But we call upon you not to strike, but work on whilst your grievances are given fair discussion between the responsible trade union leaders and the government.*

*"Strike now, and you will earn the blessings of the kaiser and his army of murderers, but you will earn the lasting condemnation of all those who are fighting and working in the allied nations to gain real freedom for civilization.*

*"And we warn you seriously that if you persist in striking this government owes it to your brave brothers who are fighting the Germans with their life's blood, whilst you are fighting with words and full bellies, that you be immediately put in the front of the firing line, and your leaders should be shot.*

*"Strike, and you may go to hell! Woolwich will remain at work, and earn the right to shake the hand of the soldier when he returns."*

*The denunciation did not stop with the Woolwich war plant workers but extended to the British seamen's and firemen's union which sent the following message to the Birmingham munition makers:*

*"The seamen and firemen who daily risk and sacrifice their lives to carry food to working men and their families appeal to the trade unionists involved in the munitions dispute not to betray their country. Never mind government departments, employers, embargoes, or other inconveniences. When we have won the war we will support you through thick and thin in maintaining the principles of trades unionism, for which some of us have worked and suffered all our lives. Don't be misled by the 'Bolshies,' who are the greatest enemies of trades unionism. Fifteen thousand noncombatant seafaring men have been foully murdered by the Huns. Are you going to fight the government over an embargo instead of doing your bit to destroy Prussian militarism and all it stands for?"*

Bureau of THE IRON TRADE REVIEW,
Prince's Chambers, Corporation St.,
Birmingham, Eng., Aug. 6, 1918.

THE Birmingham iron market has been meeting to the accompaniment of a big strike in the district of which Birmingham is the center. Fortunately, for the present it does not affect the iron and steel trades and at this time it seems probable a settlement will be found since Winston Churchill, head of the ministry of munitions has offered to hold a government inquiry.

It is well known that a great number of the strikers are abashed by the attitude of the public and other unions and uneasy as to their position after the explanation given by the ministry of munitions of their embargo scheme, the object of which is to restrict the engagement of additional labor at plants overloaded with orders for war material.

It is fortunate for the iron trade that several months ago engineers, fitters, mechanics and other skilled men related to the engineering industry were brought under the wages boards. Otherwise, we might have seen these men making common cause with the strikers, who at this critical moment of the war are threatening to lay the munition shops idle, and, in fact, have partially done so.

Some workers in molding shops and a few enginemen appear to have left their working places, but such cases are rare, and are not likely to spread. The more serious effect is likely to be felt through a further reduction of coal output, as some of these engineers are engaged in pits. This would be serious, as the fuel shortage is already giving trouble. A number of the black country works this week were unable to start before Wednesday, and if the percentage of reduction in output, due to coal scarcity, were tabulated, it probably would be found formidable. One large local works, comparing its receipts of coal as between January and June, found a shortage for the latter month of 1059 tons. Yet, as June is a month of minimum household consumption, the works should have obtained more. Something will have to be done before the winter, or next January will make a poor showing.

The scarcity of pig iron is still most serious in the Midlands. The north of England has much more supplies. There is ample forge iron and buyers requiring allotments in addition to those dealt with at the beginning of the month have readily obtained them. But there, as elsewhere, sickness has hindered deliveries and some permits have had to be cancelled. Transport facilities are quite satisfactory. The demand, for the same reason, is not now so great, production by consumers of pig iron in all branches being reduced through the prevalent epidemic of influenza. The export trade in that district is quiet because of tonnage scarcity and shipments this month will be small. A rise of 5s ($1.20) on export iron has already been reported. There is a general expectation that home prices will be increased and business is arranged on this basis. A good output of hematite is maintained with firm prices.

The midland market has hardly any point of resemblance. Supplies are short and it appears they will be further reduced. Some furnaces are unable to get sufficient coke to keep in full blast. In other cases managers are nearly distracted by the pressure brought to bear upon them to liberate

men for the army. The midland furnaces limit their sales strictly to small lots and they cannot supply some brands.

*Quality Is Poor*

Not only is fuel scarce but the quality is so mixed that more has to be used to get results. This is a serious matter now that coke is about 10 shillings higher. At present the furnaceman is not worrying much about it, the assumption being that as the subsidy system is definitely in operation the ministry will simply increase the amount of repayment, and this assumption seems fairly well founded. However, makers are preparing for contingencies by inserting a clause in all contracts stipulating that if the price is raised during the life of the contract the selling price will advance accordingly.

Next to fuel prices are the matter of chief concern in the finished iron and steel business. The various works have tabulated for the information of the ministry of munitions details as to increased cost of production and have asked for an adequate addition to the selling rates. At present money is being lost in the turning out of a number of iron and steel products but makers console themselves with the hope that whenever the rise is conceded it will be made properly retroactive.

All branches of the finished iron trade are busy. Despite labor disturbances there is plenty of inquiries with special keenness for light tinned sheets. There are four works in the midlands producing these and all are working at their full capacity, the government taking practically all the production. The products has become very expensive because of the great rise in the price of tin, which today is quoted at 380 pounds ($1824). The same cause affects the price of tin plates but these finished prices are now related, by means of an automatic sliding scale arrangement, with the selling prices of tin. Black corrugated sheets, of course, are still wanted in large quantities for use in France. At present a light steel strip 3¼ by 15 gage is much wanted, and for some reason the slabs required to produce them are not readily available. This scarcity is rather exceptional just now, since semifinished steel generally is in much better supply. Some Birmingham merchants have been able to place in South Wales fairly heavy orders for billets, wire rods, etc. This is a good sign, showing that war demands can now be amply satisfied under the head of steel. Large plant extensions are beginning to result in increased output.

The possible control of strip is being discussed but nothing seems to have been decided. At present business is done on the basis of £17, 15 shillings ($85.20) to £18, 5 shillings ($87.60). One effect of the coal shortage has been to cut down the supply of puddled iron so that orders for this half-finished material are accepted cautiously and no one books more than small lots.

A rather significant statement was made recently by Muir Ritchie, presiding at the annual meeting of the Millom & Askam Hematite Iron Co., Barrow. He stated that had there been no war profits would have been larger. This, as Americans will readily understand, is quite contrary to the general impression, but, undoubtedly, Mr. Ritchie had in mind, for one thing, the surplus profit arrangement by which the government takes a large helping out of all profit balances. But another explanation certainly is that, but for the war, the natural expansion, facilitated by ample labor and normal conditions of production, would have been much greater. Mr. Ritchie further remarked, referring to the large interests of his firm in the Barrow Steel Co. that he was content to await results, assuming that in industrial and commercial matters they would, after the war, have a national policy dictated neither by international finances nor any British brand of Bolshevism.

*Labor Shortage Is Felt*

The Sheffield steel trade has watched with a good deal of concern the preparation for a further "clean-out" with a view to extensive enlistment. The authorities, after interviews with the trade, have seen the necessity of modifying their scheme by exempting men engaged on urgently needed munitions and material. Much less reliance is now placed on substitutes, which, on the whole, have proved unsatisfactory, being useless for skilled operations, while they are incapable of doing heavy unskilled work for which they are unfitted, unless they have been accustomed to hard physical labor. Work at the rolling mills is reduced by about 25 per cent through shortage of labor.

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Announcement is made by a manufacturing concern in Norway that gas motors can be operated successfully with peat gas instead of gasoline. A Danish invention has made this substitution possible and from 2.2 to 4.4 pounds of peat per horsepower is required according to quality.

# More Capacity

**Being Provided by Newcastle, N. S. W. Works—June Output**

*(Special Correspondence.)*

Newcastle, N. S. W., Aug. 1.—Operations at the Newcastle steel works of the Broken Hill Proprietary Co. continue on a good productive basis. The company's report for June shows that 10,404 tons of pig iron were produced, while satisfactory progress was made in the construction of additional blast furnaces. One open-hearth furnace, operating with tar as fuel, produced 13,608 tons of ingots. The blooming mill produced 11,509 tons and the rail mill 6,695 tons. Production in this line was devoted principally to shipbuilding requirements and rails for the allied governments. The production of the merchant mills was as follows: Eighteen-inch mill, 3149 tons; 12-inch mill, 1385 tons; 8-inch mill, 277 tons. The coke ovens produced 11,455 tons. The company expects to have a new rod mill in operation by the end of August.

Operations in both the mills and zinc separation plants were affected by a strike of steam-shovel men. Fourteen thousand, six hundred and thirty-eight tons of ore were taken from the mines, and the ore dressing mill treated 11,832 tons of crude ore and 2851 tons of dump tailings, producing 1974 tons of lead concentrates and 2367 tons of slime. The zinc separation plant treated 4050 tons of zinc concentrates, while the slime flotation plant produced 1370 tons of lead concentrates, some assaying 9.56 per cent zinc, 61.13 per cent lead and 79.49 ounces of silver and some 49.9 per cent of zinc, 4.89 per cent of lead and 14.6 ounces of silver. Iron ore shipped to Newcastle from Hunmock hill totalled 15,600 tons.

The Amalgamated Zinc Co., of Risden, Tasmania, is now turning out about 10 tons of zinc per day by the electrolytic process. The output could be greatly increased, but the power from the Tasmania Hydroelectric Co. has been curtailed owing to difficulty in obtaining machinery.

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# Let Big Drydock

A new drydock which is to be one of the largest in the world is to be built at St. John, New Brunswick. A contract for its construction has been let by the department of public works, Ottawa, to the St. John Drydock & Shipbuilding Co. The dock will be 1150 feet long and 125 feet wide at the bottom. It will accommodate the largest ship afloat or planned.

# Structural Workers' Union Exposed

## Erectors Appeal to Government to Curb Nation-Wide Campaign to Disrupt Industry—Want More Specific Definition of "Right of Labor to Organize"—Satisfied Shipyard Workers Fined $1000 for Ignoring Propaganda

COERCIVE measures adopted by the structural iron workers' union to force the close-shop policy in all the structural iron plants and shipyards in the country are threatening to produce widespread industrial unrest and defeat the purpose of these industries to aid the government in the war to the fullest extent, according to charges the National Erectors' association has lodged with the national war labor board.

In a communication to the board, asking for a more explicit definition of the right of workers to organize, Walter Drew, counsel for the erectors, reviews the history of the structural iron workers' union, and how it failed, even after the most criminal practices of some of its officers and members, to unionize the structural iron plants of the country. He charges that the union is now using the critical war-time conditions to carry on its baneful propaganda, and he puts it up to the government whether the "right to organize" as extended to labor by the government gives this union the right to disorganize some of the principal war industries by carrying on a country-wide attack against them. He points out that the union failed to accomplish its purpose before the war because the workers were satisfied and preferred not to deal with the union, and asks why it should now be permitted to use war conditions as a leverage to upset the government's program and destroy industry's efficiency.

The union has been particularly hostile to shipyards operated on the open-shop basis, Mr. Drew claims, and, because of its dissatisfaction with the apparent satisfaction of some of its members has fined them as high as $1000 each.

### *Indorsed by Bridge Builders*

The complaint to the federal board has been indorsed by the executive committee of the Bridge Builders' and Structural society and is signed by 113 of the fabricators of the country, representing 60 per cent or more of the productive capacity of the structural iron and steel industry. The complaint in part follows:

"The 'right of workers to organize' as announced by your board is construed as sanction by the union for the institution of an aggressive and systematic campaign to unionize the structural shops of the country, which are now operating on terms of peace and harmony with their employes. The right of workers to join a union is not questioned, but it is submitted that the 'right of workers to organize' and the right of a national union to institute a country-wide attack in war-time upon peaceful establishments whose operation is most essential to war production are two very different things.

"Following are some material facts concerning the structural iron workers' union, which are deemed material since they tend to show the nature of the influence and control which would become established in the structural shops of the country if the organizing campaign of the union is successful:

"This union which is now attempting to organize the structural shops of the country is the union whose efforts to control the outside erection work of the same shops resulted in 100 explosions, innumerable assaults, the death of 20 men, and the conviction of 38 of its national and local officers. Of 26 of its officials who have served time in prison, 15 have held official positions in the union after their release. Seven of these are at present in office, and two others were the delegates of this union to the recent convention of the American Federation of Labor at St. Paul.

"The general strike to which the union's dynamiting campaign was incident, has never been called off, but is still in force.

"Because of the failure of the union to secure a closed shop in shipyard construction work and because of dissatisfaction with the classification of workers adopted on ship work, this union is hostile to shipyard work, numbers of its members have been fined as high as $1000 each for working in the shipyards, and its official publication, the *Bridgemen s Magazine*, contains reports by its national and local officers referring to the shipyards as a 'slacker's paradise,' and to iron workers employed there as 'scabs,' 'rattlers,' 'yellow dogs,' and 'slackers.' The fabrication of material for these same yards constitutes a large percentage of the present work of the structural shops of the country.

"This union at present stands in contempt of the war labor board inasmuch as five of its eastern locals recently refused to return men on strike to work at the request of the board and to submit the wage controversy in issue to the board for adjustment. The strike is still in force."

In a supplementary statement issued by Mr. Drew he says:

"The council of national defense has taken the position that employers and employes in private industries should not attempt to take advantage of the existing abnormal conditions to change the standards which they were unable to change under normal conditions.. Notwithstanding this, a deliberate and systematic attempt is being made by the structural iron workers' union to organize the structural steel industry of the country.

"The relations between the employers and employes in this industry are at present friendly and satisfactory and the shops are on a basis of high productive efficiency. During the last twelve years the same union has from time to time made efforts to organize the various structural shops of the country but has been unsuccessful, as the relations between the employers and employes have been such that the employes have not felt that it was to their interest to join this union.

"At the present time our industry is fabricating all of the structural material for the government, including that used in the shipyards of the country building fabricated ships. The problem of labor supply and labor efficiency is the most serious one we have to face. The organized campaign of the union will cause unrest, discontent and loss in efficiency, and if the results are successful will lead to controversies that will make it impossibe for our industry to perform its part of the nation's war program as it should be carried out.

"We most emphatically protest against the efforts that are being made by the union to change the existing standards, as they were not able to change these standards under normal conditions, and the changing of them is contrary to the policy laid down by the council of national defense and the country will suffer greatly thereby.

"We ask the board to affirm this policy and to make it clear to employer and employe alike that any efforts contrary thereto are under existing conditions coercive."

Officers of the structural iron workers' union have denied Mr. Drew's charges, claiming that they had not heard of any attempt to unionize shipyards or of the fining of shipyard workers.

## Byers Strikers Return

Employes of the A. M. Byers Co., Girard, O., have returned to work after being on strike 10 days, pending a report from the national war labor board on their demand for union recognition. The only result they accomplished by striking before the board could decide the issue was the loss of about 2000 tons of muck bar needed for war materials. The strike was called Aug. 5 because the men had expected a report Aug. 3.

# Replacements Further Explained

## Series of Interesting Questions Submitted to War Industries Board is Answered in Detail—Iron Goods Reported Same as Steel—Miscellaneous Items Are Defined

PITTSBURGH, Aug. 20.—Further explanation regarding the position of jobbers in getting replacements under the regulations of the war industries board is made in another letter received from J. Leonard Replogle, director of steel supply, by George D. McIlvaine, secretary of the National Pipe and Supplies association, Pittsburgh, dated Aug. 12. The letter is in response to 15 questions submitted to Mr. Replogle and is as follows:

The following are a series of questions which have been put to me from one of the secretaries, and I am repeating them herewith and giving you the best answers that I can make to the various inquiries. They are as follows:

*Question No. 1.*—If a wholesaler places only a few orders during a month, is he entitled to order in the next month not to equal the combined tonnage of two months covered by the monthly reporting system, or is it compulsory that his monthly orders of the manufacturers equal the total of his monthly sales and deliveries? Each month's replacements must be equal to the jobber's shipments during the previous month, and no cumulative replacements are permitted.

*Question No. 2.*—Should iron bars and iron steam pipe be included in the monthly report—in other words, should iron goods be reported the same as steel? Yes.

*Question No. 3.*—Does the monthly report of steel products cover small items such as stove bolts, screws, valves, etc.? No.

*Question No. 4.*—Where wholesale hardware houses sell to country stores, located at the cross roads or in a small farming community, are they privileged to include the steel products such as wire nails, smooth wire and barbed wire, under the head of agricultural products under the title food and collateral industries? Yes, providing they are assured that material is being sold for agricultural purposes.

*Question No. 5.*—Does the attached list of tentative items under the monthly reporting system cover the list fully and correctly? If not, what corrections should be made? What list? If you will refer to the item of "Miscellaneous", a decision has been made by Murray Sargent, chief of hardware and hand tool section, that the only items that should be reported monthly in the miscellaneous column, under the head of "Hardware", should be track bolts, machine and carriage bolts, track spikes, rivets and steel washers, and that all articles carried by jobbers should not be reported because it would be hard to convert same into tonnage basis, as many of these other articles are made of compositions of steel, wood, canvas, rubber, etc. This department is of the opinion that, until some later decision is made, the monthly report as above indicated, should be sufficient for the protection of steel consumed, i. e. handled by the jobbing trade.

*Question No. 6.*—In such items as wire products manufactured as steel fly wire, what provision other than the bulletin of July 3 and the ruling of July 24, does the war industries board desire to make? Must be reported under the head of "Wire Products", but is provided for in Supplement 1, Circular No. 4, and classified under Class C.

*Question No. 7.*—If a hardware wholesaler receives an order for a shipment direct from the factory of a carload lot of goods for a shipyard or other industry having a high priority rating, in what manner may he secure the benefit of the precedence which is accorded to such industry for which the steel products are intended, the industry bearing a good rating? Orders for direct shipment from the mill placed through the jobber must be handled in exactly the same manner as the mill would handle an order direct from the consumer, as covered by paragraphs 7, 8 and 9 of Bulletin No. 4, with the necessary endorsements in case of a government order, or affidavits in the case of automatic classifications for domestic uses outlined in paragraph 8, and on Class C material affidavit as outlined in paragraph 9.

*Question No. 8.*—In wholesale distributing houses handling machinery such as milling machines, lathes, planers and other heavy tools, is it the desire of the director of steel supply, that such heavy tools should be reported in terms of tonnage although they sell at so much per unit, such as $800 or $1000 for the tool complete? No.

*Question No. 9.*—Where galvanized or black sheets are sold to makers of fire doors for fire prevention purposes as required by the fire underwriters, under what classification may the jobber report such sales? Other purposes covered by administrative priority rulings.

*Question No. 10.*—Where retail hardware stores in cities sell small quantities of wire nails to carpenters in what manner should the wholesaler report such sales to these retail hardware dealers, when making his monthly report? Other purposes covered by administrative priority rulings.

*Question No. 11.*—Under what classification, if any, would steel products sold to manufacturers of machinery for repairing shoes be reported by the wholesaler? Classified under "Clothing".

*Question No. 12.*—Under what classification, if any, should steel products sold to manufacturers of cigar making machinery be reported? Except for repairs, in which case it is classified under other purposes covered by administrative priority rulings.

*Question No. 13.*—Under what classification should a wholesaler report galvanized sheets sold for the purpose of manufacturing eaves, trough and conductor pipe or what is generally known as gutter and spouting for the purpose of conducting rain water from the roof of dwellings, farm houses, barns, etc., either to a draining system or to a barrel or cistern for water supply purposes? There is no classification for the sale of sheets for this purpose, but as the eave troughing and conductor pipes on dwellings and essential industries are necessary, this may be considered for the present under permit of the director of steel supply.

*Question No. 14.*—Will the warehouses of manufacturers be relieved of the necessity of making a monthly report and thus be able to replenish their stock on a more liberal basis than the regular wholesaler? No. An order requiring manufacturers who maintain warehouses of their own will shortly be issued requiring them to make monthly reports and replacements of the same.

*Question No. 15.*—In the event that wholesalers' stocks are unduly depleted and cannot be brought up to even normal or below normal through the monthly report replenishment system, or the July 24 ruling, in what manner may they secure a minimum reasonable stock in order to more efficiently serve the war needs and other essential needs of their immediate territory? Cannot at present make any other suggestion than that covered by replacement or the July 24 ruling.

## Woodward Steel Plant

Birmingham, Ala., Aug. 20.—A. H. Woodward, chairman of the board, and R. H. Bannister, president, of the Woodward Iron Co., have returned from Washington and New York and have announced that engineers will be engaged to prepare estimates on a steel mill project which the government will help to finance to the amount of $25,000,000. Mr. Woodward said that the engineers will work out the details and that the plant will consist of steel works, fabricating shop and steel foundry. The steel works, it is expected, will be put up not far from the furnace plant of the Woodward company, and within a short distance of the coal mines. There is plenty of property available for the plant. Water is one of the problems being considered. Mr. Woodward announced that Frank H. Crockard, former vice president and general manager of the Tennessee Coal, Iron & Railroad Co. and later president of the Nova Scotia Steel & Coal Co., would be in the Birmingham district this week.

# Straight Talk for Auto Dealers

## War Industries Board Suggests They Go on a War Basis in View of Passenger Car Curtailment—Class C Rating Granted Steel for Horse-Drawn Vehicles

WASHINGTON, Aug. 20.—Following the war industries board's meeting with representatives of passenger automobile manufacturers and its open letter practically ordering cessation of pleasure car construction after Jan. 1, 1919, the board held a meeting with representatives of the National Automobile Dealers' association at which these points were brought out:

"1. While no order has been issued by the war industries board canceling motor car production and no definite order of curtailment could be given until the automobile manufacturers had submitted inventories of present stocks, the board has suggested to manufacturers of automobiles that they undertake to get war work, even up to 100 per cent, if possible, by Jan. 1, 1919. Automobile manufacturers have already accepted war orders aggregating between $800,000,000 and $900,000,000.

"2. The war industries board realizes the importance of a continuation of all possible industrial activity, so far as it can be brought about without interference with the war program.

"3. All automobile dealers, however, should put themselves as rapidly as possible on a war basis, in order to be ready for whatever curtailment may become necessary.

"4. The war industries board has not classed the automobile or any other industry as nonessential, and in determining the standing and position of any and every industry it will be guided solely by the war requirements and the needs, as distinguished from the wants, of the civilian population.

"5. In view of the fact that the war requirements of steel and rubber exceed the supply and makes automobile curtailment necessary, the war service committee of the National Automobile Dealers' association has agreed to recommend ways and means to stop the unnecessary use of passenger cars and increase their utilitarian uses."

### *A Rating For Wagons*

The priorities division of the war industries board has placed an automatic rating of Class C on allotments of iron and steel entering into the manufacture of horsedrawn spring vehicles. This is pointed out to the manufacturers in a letter from Edwin B. Parker, priorities commissioner, who says that the automatic rating is not a guarantee of delivery of the iron and steel allotments but it means "that orders may be placed and deliveries made when and as such orders shall be reached in their order of precedence."

### *Applications Considered Carefully*

Applications for places on the preference list for fuel may be filed by the manufacturers, the letter states. The priorities division will consider the character of the product of each manufacturer, the amount of its fuel requirements, the volume of output, and the extent of its direct and indirect business for government agencies. The placement of the manufacturer upon the list is subject, however, to the condition of his having taken and filed with the war industries board the following pledge:

"The undersigned hereby pledges itself (1) to use only in the manufacture of horse drawn spring vehicles or repair parts for same the iron and steel, and iron and steel parts suitable therefor, which are now in its possession or which may hereafter come into its possession; (2) to devote the products of its manufacture as far as possible to essential uses only, as that term has been or may be defined or applied from time to time by the priorities division of the war industries board; (3) to urge and procure so far as lies within its power all dealers in or users of its products to exercise all possible economy and conservation in such products by limiting sales and purchases, by curtailing the numbers of varieties and models heretofore manufactured by it, by intelligently repairing and by otherwise protecting and lengthening the life of such products; (4) to cooperate with the conservation division and the vehicle, implement and wood products section of the war industries board to effect the conservation of material and economy in the use thereof; (5) not to furnish its products for resale to any dealer who shall fail or refuse to co-operate with the undersigned in carrying out the letter and spirit of this pledge."

Manufacturers desiring to participate in the allotment of iron and steel should apply to E. E. Parsonage, chief of the vehicle, implement and wood products section of the war industries board, for authority to place its orders for its proportionate part of the materials allotted to the industry as a whole according to the reports of the manufacturers filed with the section. When the application shall have been approved by the priorities committee, it will take a Class C priority rating, and orders may be accepted and filled accordingly. The letter says:

"Circumstances do not permit the allotment to your industry of sufficient quantities of iron and steel to meet your maximum or even your normal requirements. A careful study of your reports of stock on hand and of your manufactured and partly manufactured products justifies the allotment to you of a certain agreed maximum which will enable you to liquidate your present stocks. This allotment will be made and your requirements within this maximum are hereby given a Class C priority rat- manufacturer participating in the allotment shall execute, file and observe the pledge of co-operation in the terms hereinafter set out."

## Manganese Ore Rates Cut

Washington, Aug. 20.—Director General McAdoo has announced new rates on manganese ore and declares they "are much lower than the prevailing rates carried in current tariffs." The rates are for carload shipments, per net ton, minimum carload weight 60,000 pounds.

From points in Oregon, Washington and California to Chicago, Indiana Harbor and Erie and from Nevada stations to points in Alabama and Tennessee taking Group C rates, $11.

From points in Oregon, Washington and California to Youngstown, Pittsburgh, Buffalo and Group B and C stations in Ohio and from Oregon and Washington to Group C points in Alabama and Tennessee, and from Nevada to seaboard territory, $12.50.

From stations in Arizona and Utah to points in seaboard territory, including Goshen, Graham, Reusens, and Roanoke, Va., and from Nevada

points to Youngstown, Pittsburgh, Buffalo, and B and C station in Ohio, $11.50.

From Arizona and Utah points to Youngstown, Pittsburgh, Buffalo and related destinations and from Montana stations to points in seaboard territory, including the four Virginia destinations, $10.50.

From Washington and California stations to seaboard territory destinations, $13.50.

From Montana points to C points in Alabama and Tennessee and Pittsburgh, Buffalo, Youngstown and related Ohio points, and from Colorado and New Mexico stations to seaboard territory, $9.50.

From Oregon points to seaboard territory, $15.50.

From Colorado and New Mexico stations to Youngstown, Pittsburgh, Buffalo and B and C stations in Ohio, $8.50.

From stations in Montana to Chicago and related points, $8.

From Nevada points to Chicago, Indiana Harbor and Erie and from Utah stations to points taking C rates in Alabama and Tennessee, $10.

From Arizona and Utah stations to Chicago, Indiana Harbor and Erie and from Arizona points to Group C destination in Tennessee and Alabama, $9.

From California stations to Tennessee and Alabama points in Group C, $12.

From Colorado and New Mexico stations to Chicago, Indiana Harbor and C destinations in Alabama and Tennessee, $7.

# Need Pig Iron for Shells

WASHINGTON, Aug. 19.—Semisteel shell contracts recently placed with companies operating large foundries by the ordnance department of the army, will call for a heavy tonnage of pig iron and scrap, the satisfaction of which it has been found entails considerable difficulty on account of the general pressure upon supplies. The situation has been somewhat complicated by the fact that considerable foundry iron capacity has been switched over to steelmaking grades during the past few months. It is expected that this problem will continue more and more pronounced as the contracts for semisteel shells are placed in increasing magnitude as is the present plan.

For 1,000,000 six-inch semisteel shells, which have just been awarded by the ordnance department, 50,000 tons of foundry pig iron and 15,000 tons of steel scrap will be required. It is figured that the scrap proportion of the mixture going into these shells will be about 30 per cent but absolute figures are not advailable.

Most of the new orders for shells have been distributed among the United States Cast Iron Pipe & Foundry Co., for its Burlington, N. J., plant; American Radiator Co., to be produced at Buffalo, and the Wilson Foundry & Machine Co., Pontiac, Mach. Other contracts calling for a great number of projectiles of a similar character now being shaped and will be awarded soon.

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The plant of the Schwinn Foundry & Machine Co., Dubuque, Ia., which is equipped for the manufacture of gray iron and brass castings, is being remodeled. New equipment is being installed and it again will be placed in operation within about 60 days. The main building of this foundry is 300 feet long and 55 feet wide.

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## General Motors Corp. Will Build Tractors

Coincident with the announcement from Washington that no more passenger automobiles will be built after Jan. 1 for the duration of the war, President W. C. Durant, of the General Motors Corp., has stated that his company will embark on the manufacture of tractors on a vast scale. The company is now interested in a malleable iron plant in Saginaw, Mich., which will be the basis of the first unit in the new enterprise, a foundry upon which it is proposed to spend $1,000,000. The company is now having engines made by the Northway Engine Co., Detroit, for the first 500 experimental tractors.

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## To Build Railroad

The railroad administration is expected to approve the request of the Youngstown Sheet & Tube Co., for authority to build an eight-mile railroad to connect its Greene county, Pa., coal properties with the trunk lines serving that territory. The company has been storing coal at the rate of 100 tons daily, being unable to transport it from the mines to its plant.

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Pittsburgh manufacturers have been asked through the war resources committee for bids on 61,200 machetes of the Bolo type for the American armies. They are required particularly for clearing pathways through underbrush. Bidding will close Aug. 15.

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## Metal Trades Help to Form New Labor Policies

A special committee has been appointed to represent the National Metal Trades association in assisting the war labor policies board in framing important policies now being considered at Washington, including the plan for the classification of labor. The committee consists of the association's president, J. O. O'Leary, chairman; W. A. Layman, St. Louis; F. C. Caldwell, Chicago; Henry D. Sharpe, Providence, R. I., and J. H. Schwacke, Philadelphia.

At a conference of the association's administrative council, presidents of branches and past presidents of the association in Chicago recently, Mr. O'Leary explained the significance of the new policies contemplated by the government and announced that he had appointed the committee in response to a request from Dr. Frankfurter, director of the war labor policies board. The board desired suggestions from the association, and, on its part, the association was desirous of protecting the interests of its members in any plan that may be broached for the equitable distribution of skilled labor. A series of resolutions was adopted expressing the attitude of the association on certain fundamental issues. While the resolutions were withheld for later announcement it seemed to be fairly well understood that a classification of workers was apparently inevitable.

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## Adds Electric Melting

The Milwaukee Steel Foundry Co., Milwaukee, has completed arrangements for the building of a 100 x 125-foot addition to its present plant and equipping it with a 3-ton Heroult electric furnace. The new building will be constructed of reinforced concrete, brick and steel. A 10-ton Pawling & Harnischfeger crane has been purchased and additional orders for equipment are now being placed. The company will also build a 5-story fireproof pattern shop and storage building, 40 x 80 feet, and a 2-story office building, 40 x 50 feet. Burton C. Wait, president and general manager, estimates the improvements will cost $125,000. The present plant contains three 2-ton converter furnaces and is producing about 400 tons of steel a month.

# New Purchasing System is Outlined

## General Goethals Issues Regulations Providing for Fullest Publicity Consistent With Military Safety—Information Regarding Contracts Will be Given Out by Brig. Gen. Hugh S. Johnson

WASHINGTON, Aug. 20.—The army apparently is intent upon giving as full publicity to its contracts and awards as is compatible with the policy of withholding all information of value to the enemy. Maj. Gen. George W. Goethals has issued a circular instructing war department bureaus to submit to Brig. Gen. Hugh S. Johnson all information pertaining to contracts and awards and providing for General Johnson's ultimate statement's to the public.

General Goethals issued the order as assistant chief of staff and director of purchase, storage and traffic of the army. General Johnson, who was active in Maj. Gen. Enoch S. Crowder's administration of the draft law, is director of purchases and supplies for the army and the war department's representative on the war industries board. Secretary Baker has given approval to the order.

The circular in full, as published by direction of General Goethals, is as follows:

"1. Full publicity shall be given to proposed purchases and to awards of contracts by the various supply bureaus of the war department in the manner and subject to the restrictions hereinafter stated.

"2. Each bureau shall transmit forthwith to the director of purchases and supplies an indexed list showing—

"(a) The articles purchased by it.

"(b) The address of the office to which prospective bidders should apply for detailed information in respect of particular articles or classes of articles on the list.

"In submitting these lists each bureau shall indicate thereon those articles concerning which, in its opinion, information usually contained in circular proposals to the trade would be of substantial military value to the enemy, and shall accompany each such indication with the reasons therefor.

"3. The director of purchases and supplies shall submit such lists to the military intelligence branch, general staff, who shall delete therefrom the names of articles whose inclusion would afford information of substantial military value to the enemy.

"4.—The director of purchases and supplies shall then obtain the fullest practicable publicity of such lists as censored in accordance with the preceding paragraph and of a notice to all intending bidders that circular proposals for bids for the furnishing of such articles will from time to time be sent out to persons on the mailing lists of the bureaus interested, and that the name of any intending bidder will be entered on such mailing list upon application to the bureau interested accompanied by satisfactory references from banks or reputable business concerns or from the chairman of the local regional manufacturers organization associated with the war industries board.

"5. The lists of articles purchased by each bureau as censored shall be returned to the bureaus submitting them, who shall thereafter issue circular proposals whenever any articles on such censored lists are to be purchased, except in classes of cases or in particular circumstances where purchase without proposal may have been authorized by the superior board of contract review.

"6. Even in the case of articles on the censored list, when, due to special circumstances concerning either the specifications, quantity, or purchase of such articles, there is any doubt as to the military value of information that may be disclosed by circular proposals, such proposals shall not be issued by the bureaus without consultation with and clearance by the military intelligence branch.

"7. Bids on circular proposals shall be opened and given publicity at such time or times and place or places as may be specified by the bureau inviting them.

"8. Abstract reports of all bids and awards on circular proposals shall be sent to the director of purchases and supplies, who shall submit them to the military intelligence branch, general staff. The military intelligence branch shall delete therefrom all awards whose inclusion would afford information of substantial military value to the enemy. As thus censored, the director of purchases and supplies shall obtain the fullest practicable publicity of such abstract reports.

"9. The lists prescribed in paragraph 2, the copies of circular proposals prescribed in paragraph 5, and the abstract reports prescribed in paragraph 8 shall be available at all times to the public and the press in the information office of the purchase and supply branch, general staff.

"10. Each supply bureau shall maintain one or more information desks where there shall be available information as to the officers handling the articles purchased by it, together with blanks for proposals and a bulletin board upon which shall be posted all circular proposals. The location of the information desk or desks in each bureau shall be published in the official bulletin."

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The American Manufacturers' Export association has completed arrangements whereby its members can entertain their foreign customers at the Old Colony Club, New York. The privileges include the general facilities of the club. This arrangement is expected to aid in strengthening commercial relations between American manufacturers and foreign buyers.

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## Name is Changed

Youngstown, O., Aug. 19.—Owing to confusion resulting from the similarity of the names of the war industries board and the war industries commission, the name of the latter has been changed to that of the District Manufacturers' commission. A meeting of the Youngstown division of the latter body, of which W. H. Foster, president of the General Fireproofing Co., is chairman, will be held Aug. 26, to be addressed by former Judge J. B. Kennedy, chairman and general counsel of the Brier Hill Steel Co., and Howard S. Thayer, Washington representative of the national war body. A full representation of the approximately 300 manufacturers in the Youngstown division is expected to be in attendance.

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## Group Chairmen Chosen

Sub-chairmen of the classified industries of Youngstown division, Cleveland district, of the resources and conversion section have been named. W. H. Foster, president of the General Fireproofing Co., is division chairman.

The sub-chairmen will affiliate with chairmen of the same industries in other divisions of the Cleveland district in the handling of business relating to their respective lines. Those named were: casting, B. G. Parker, secretary and treasurer, Youngstown Foundry & Machine Co.; forgings and stampings, T. H. Kane, general manager Trus-Con Steel Co.; rubber products, G. E. Norwood, president, Republic Rubber Corp.; machinery and machine products, George Knotts, general manager, Youngstown district, United Engineering & Foundry Co.; chemicals, oils and paints, I. J. Robinson, president, Goheen Manufacturing Co., Warren, O.; textiles, H. Zweifel, president, Mercer Silk Co., Mercer, Pa.; wood products, Adolph Heller, Heller Bros. Co., Youngstown; leather, M. I. Arms, president, Ohio Leather Co. Sub-chairmen for the clay products and automobile industries are yet to be named.

# Iron and Steel Financial News

**Up-to-the-Minute Fact and Comment Collected and Sifted For Busy Readers**

# Certificate Issues for Tax Anticipation

IN order to assist business interests to provide for income and profits taxes due next year under the revenue bill now being framed, Secretary McAdoo announces that an indefinite amount of certificates of indebtedness, bearing 4 per cent interest and acceptable in payment of taxes in 1919, would be issued immediately. These certificates, similar to those floated in anticipation of the tax collections earlier this year, will take the place of the usual biweekly issue of loan certificates. In effect, the offering of tax certificates at this time affords a means of advance installment payments on next year's taxes.

Further delays have been encountered by the house ways and means committee in agreeing upon the final draft of the new $8,000,000,000 revenue bill, making it improbable that the bill will be submitted to the house for passage before next week. Secretary McAdoo appeared before the committee last week and made a detailed argument for the present excess profits tax with an alternative war profits tax, instead of the increased excess profits tax the committee planned to write into the bill.

"The excess profits tax exempts capital and burdens brains, ability and energy," he argued. "The excess profits tax falls less heavily on big business than on small business, because big business is generally overcapitalized and small businesses are often undercapitalized."

The treasury department has made a recommendation that businesses be classified into eight groups under the profits tax law and that an exemption as to allowable prewar profits be fixed at the discretion of the treasury department upon each group. These percentages, it was specified, should in no case be less than 8 per cent nor more than 12 per cent and within these limits the determination of the commissioner of internal revenue should be final.

Some important ideas on the subject of profits taxing were set forth in testimony before the ways and means committee by Assistant Secretary of Treasury Leffingwell. He was quoted as follows:

"None of us who knows anything about the history of contracts for munitions made before the United States entered the war, when the American plants were first confronted with the problem of war supplies, fails to realize that it is a very serious business. You are forced to make this heavy allowance when you compel the manufacturer to undertake a contract which he does not want to accept and assume responsibility that he would rather keep away from. We must make a fair contract in order to get it signed and get things started over to the other side. Those are the conditions. Many of the manufacturers would be willing for us to take 80 per cent of the war profits. They would say: 'Our workmen would be better pleased if we could have a guaranty of 20 per cent of the profits. If you will give us one-fifth of the profits we will be satisfied.' These business men are just as patriotic as any of us, but they do not want to be placed in a position where they must sign a contract which means ruin if things go wrong, or stupendous war profits if things go right.

"The question of the prewar period is a very different one. Historically, the period before our entrance into the war, that is, the period ended 1915, would be an exact application of the principle of the British tax, but there was a war during that period and many of our people were already profiting.

"On the other hand, if you go back to the period before the European war began you are confronted by the increased number of corporations which were not in existence during the prewar period which you have arbitrarily adopted, and consequently you would have to depend upon the invested capital exemption to take care of those cases. It seems to me that a determination of the prewar period ought to be made after an analytical study of the conditions and that an effort should be made to bring that period down to a later date than the beginning of the war in Europe.

"The element of error is taken care of under the ordinary tax bills by the fact that the taxes are so small that any amount of mistakes can be made without hurting anybody very seriously. That was the experience up to this last revenue measure. The actual experience showed that people were not hurt as much as they thought they would be by that measure. We had painful cases where people bought more tax certificates to use in paying their taxes than they had taxes to pay. When they reached the point of figuring out their taxes the amount was not as big as they thought it would be. But we are approaching the point where we are taking all the taxes that we can safely take. If we take $8,000,000,000 we are taking as much as we can safely take at this time, and we must take it in the right way.

"The people who are making more money than they were before the war can pay those taxes, and they ought to pay, but when we adopt that rule and put it in the law, we must put in the law power to deal with exceptional cases, so that we may not ruin anybody by the arbitrary application of agent principle. We must take advantage of England's experience and be prepared to temper the blow to the corporations that we are unable to deal with upon any general rule.

"There is very great peril in increasing the excess profits tax rates and it lies in the fact that these securities were distributed to investors at the market quotations, determined by the earning power of the corporations before the war, and in levying a tax which impairs the power of the corporations to continue the dividend distribution which was in existence before the war, we should seriously impair the credit of those corporations; we should take taxes from those investors at high rates which ought not to be taken and thus impair their income and correspondingly we should impair the ability of the government to continue the war."

Treasury officials today submitted a plan to divide business into eight classes on which the treasury will have discretionary powers to fix the percentage of deduction for prewar earnings anywhere between 8 and 12 per cent. This plan as submitted follows:

"Tax computed by the war profits method shall be 80 per cent of the amount of the net income in excess of the war profits deduction.

"For the purposes of this section, the general prewar percentage for any general class of trade or busi-

ness is the average percentage of net income to invested capital for the prewar period of corporations embraced in such general class, determined as nearly as may be by the commissioner of Internal revenue, with the approval of the secretary, from the returns made for the first taxable year under the revenue act of 1917 for each of the following classes of trade or business: Manufacturing, mining, mercantile, financial, transportation by land, transportation by water, public utilities other than transportation, miscellaneous.

"The general prewar percentage shall in no case be less than 8 per cent nor more than 12 per cent, and within these limits the determination of the commissioner of internal revenue shall be final.

"The general prewar percentage for any corporation shall be the percentage determined for the general class of trade or business to which such corporation belongs. If the corporation is engaged in more than one general class of trade or business the percentages shall be applied to its principal trade or business. The war profits deduction shall consist of a special exemption of $3,000 plus, at the option of the corporation, either an amount equal to the general prewar percentage of its invested capital for the taxable year or an amount equal to its average net income for the prewar period increased or diminished, as the case may be, by an allowance for changes in invested capital since the prewar period."

The income levies as written into the new bill provide for a normal rate of 5 per cent on the first $4000 of taxable income, with exemptions unchanged from last year. After that the rate goes up to 10 per cent, with a schedule of surtaxes ranging from 3 per cent on income between $5000 and $7500 to 75 per cent on incomes over $5,000,000.

## Financial Crop Ends

The National Engineering & Tool Works, Oak Park, Chicago, has increased its capitalization from $49,000 to $150,000 and has changed its name to the Strom Steel Ball Co.'s.

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The International Harvester Co. has announced the sale of its Osborne line of harvesting machines to the Emerson Brantingham Co., of Rockford, Ill. The sale does not include the Osborne plant at Auburn, N. Y., nor the Osborne tillage implements and hay tools, which the International Harvester Co. will continue to make.

* * *

With no change in ownership or personnel of officials or directorate, the Phillips Sheet & Tin Plate Co., Weirton, W. Va., announces the change of its corporate name to the Weirton Steel Co. The Phillips Co., has made application to the secretary of state at Charleston, W. Va., for authority to increase its capital stock from $5,500,000 to $30,000,000. The company recently purchased a large acreage adjacent to its plant at Weirton and this will be used in the proposed expansion of the works, which will include the building of by-product coke ovens and a blast furnace. The company sometime ago bought large acreages of coal in the so-called upper Pan-handle country.

* * *

The reorganization of the personnel of the Standard Foundry Co., Racine, Wis., following the sale of the major interest by Albert and Henry Kousek to Arthur R. Janes, vice president, and associates, has been completed as follows: President, Arthur R. Janes; vice president, David G. Janes; secretary and treasurer, E. L. Mrkvicka.

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The National Acme Co., Cleveland, closed the second quarter of the year with net sales of $3,909,581 against $4,729,453 one year before. The net profits, however, were $1,540,829 as compared with $1,448,051, a gain of $92,778. Dividends paid amounted to $375,000, while surplus was $1,165,829, against $1,073,051 the year previous. The quarter's figures are given before excess profits deduction.

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The Savage Arms Corp., New York, for the three months ended June 30, reports earnings of $3,094,669, compared with $2,324,595 for the previous quarter. The balance, after deduction of fixed charge, taxes, etc., was $450,603, equivalent to $5.17 a share on 87,155 shares of common stock as against $411,885, the equivalent of $4.72 a share, earned during the quarter ending March 31.

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Some recent increases in capitalization are as follows: the F. H. & S. Co., Chicago, from $50,000 to $100,000; the Miami Metals Co., 122 South Michigan avenue, Chicago, from $100,000 to $600,000; the Badger Foundry Co., Racine, Wis., from $30,000 to $100,000; the Connecticut Electric Steel Co., Hartford, Conn., from $105,000 to $157,500; the Penn Metal Co., Boston, from $300,000 to $400,000.

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Before making allowance for federal taxes, the net profits of the Stewart-Warner Speedometer Corp., Chicago, in the second quarter of 1918, were $716,728. This compares with $694,070 net before federal taxes for the June quarter last year. Net profits before federal taxes for the six months ended June 30, 1918 were $944,310, against $1,270,000 a year ago. The decrease in net for the six months is due, it was explained to a falling off in business for the first quarter as a result partly of the hard winter which caused a material reduction in orders. Another adverse factor which slowed up production was the transition into government work.

W. J. Pollard, fire chief of the International Harvester Co., reports that for five years the fire losses in 18 International Harvester factories in the United States and Canada were only $1028.87. This includes incipient fires with loss as low as $2.

## No Free Naphtha

### Sulphate of Ammonia Sold at $4.50—Benzol Contracts Made

New York, Aug. 17.—Producers of solvent naphtha have been notified that no orders for this product hereafter may be accepted without a government permit. Contracts which recently were placed leave no solvent naphtha for the general market and consumers who need it will be able to obtain it in the future only by making application to the navy department at Washington and submitting assurances that the material will be used for essential purposes. As a result of this situation, prices on solvent naphtha are entirely nominal although the market still may be quoted at 20 to 25 cents per gallon at producers' plants. Solvent naphtha, as a result of this ruling now is in the same class as toluol.

Due to the scarcity of toluol, the present outlook is that for an indefinite period ahead the war industries board will release for commercial consumption only a portion of the quantities for which application is made. Only 50 per cent of the amounts wanted for commercial consumption during August were released and a similar paring down of September releases is expected.

For some months past occasional carloads of sulphate of ammonia have been sold to chemical users at $5.65 to $5.75 per 100 pounds.

Due to the large quantities which are going to the government the statistical situation in benzol is exceedingly strong.

### Coke Oven By-Products

| | |
|---|---|
| **Spot** | |
| **Per Gallon at Producers Plant** | |
| Pure benzol | $0.22 to .27 |
| Toluol (on sales sanctioned by government) (tank cars) | 1.50 |
| Toluol (on sales sanctioned by government) drums | 1.55 |
| Toluol (for government) | 1.50 |
| Solvent naphtha | .20 to .25 |
| **Per Pound at Producers Plant** | |
| Phenol | $0.44 to .46 |
| Naphthalin (nominal) | .10 to .12 |
| **Per 100 Pounds at Seaboard** | |
| Sulphate of ammonia (to fertilizer trade) | $4.50 to 4.75 |
| **Contract** | |
| Pure benzol | nominal |
| Toluol | no market |
| Solvent naphtha | nominal |
| **Per Pound at Producers Plant** | |
| Phenol | $0.44 to .46 |
| **Per 100 Pounds at Seaboard** | |
| Sulphate of ammonia (for commercial use) | no market |
| Sulphate of ammonia (for government) | $4.50 |

# Men of the Iron Trade

**Personal News of a Business Character Regarding the Men of Affairs of the Industry**

HAROLD Hart, manager of the motor truck department of the Nash Motors Co., Kenosha, Wis., has accepted a captain's commission in the ordnance department and has reported at Camp Metuceh, N. J., for service. Capt. Hart is the third executive of the Nash company to be called to the service within the last few weeks. Charles W. Nash, president and general manager, is now assistant to John D. Ryan, director of aircraft production, and in charge of engineering and production. N. E. Wahlberg, chief engineer of the Nash company, is a major in the ordnance department.

H. S. Benjamin formerly general sales manager of the Saxon Motor Corp., has been appointed sales manager for the Holley Carburetor Co., Detroit.

Frank H. Willard, assistant general manager of the Graton & Knight Mfg. Co., Worcester, Mass., is planning a business and pleasure trip to the Pacific coast.

Col. John T. Thompson, retired, has been appointed supervisor of manufacturing arsenals of the war department, succeeding Col. S. E. Blunt.

P. C. Carmichael has been appointed superintendent of M. A. Hanna & Co.'s Hobart mine at Gilbert, Minn. He formerly was in charge of the company's Alexandria mine at Chisholm, Minn.

H. A. Conlon, sales manager, has been elected vice president and director of sales for the Acason Motor Truck Co., Detroit. J. F. Bowman, vice president and general manager has resigned.

R. Sanford Riley, director of the performance branch of the Emergency Fleet corporation, has left Worcester, Mass., for a six weeks trip to shipyards on the Great Lakes and the Pacific coast.

H. B. Garman, for a number of years superintendent of the Detroit factory of the Steel Products Co., Detroit and Cleveland, has been appointed manager of the Michigan plant, Detroit. He is well known in the automobile industry. Mr. Garman expects to take up his new duties immediately.

Lee R. Farrell, secretary and sales manager of the Portage Silica Co., has been named a member of the war service committee of the American Sand association.

A. F. Strouse has been commissioned a first lieutenant in the engineer corps and is waiting orders for active service. He formerly was superintendent of the H. C. Frick Coke Co.'s plant at Grindstone, Pa.

Edward A. Moss, Cleveland, has given up his business in structural steel and miscellaneous iron work for the duration of the war and has accepted a position in the Cleveland district ordnance office of the United States army, in the production division.

Capt. W. L. McCleary of the ordnance department of the army, formerly with the Whitaker-Glessner Co., Portsmouth, O., has been awarded a major's commission. Major McCleary represents the war department in the steel division of the war industries board.

W. T. Nevins, formerly general superintendent of the Buffalo Dry Dock Co., has been appointed superintendent of ship construction of the Chickasaw Shipbuilding Co., and the United States Steel Corp.'s plant now being built at Chickasaw, the new industrial city near Mobile, Ala.

George J. Roberts, East Orange, N. J., vice president and general manager of the Public Service Corp. of New Jersey, was recently appointed as ordnance district chief of the New York district, and will have his office in the Albemarle building, Broadway and Twenty-fourth street.

Lieut. Leonard Bonner, son of James B. Bonner, vice chairman of the subcommittee on steel distribution of the American Iron and Steel institute, has been promoted to captain. Captain Bonner is only 23 years old, one of the youngest in the service, and is in the motor transport division of the army.

Charles Piez has again been named general manager of the Emergency Fleet corporation. Mr. Piez resigned the title to retain that of vice president when Charles M. Schwab became director general. Mr. Schwab has now reappointed him as general manager in readjusting the organization. Howard Coonley was named vice president in charge of administration, subject to the direction of Mr. Piez, and J. L. Ackerson was made executive to Mr. Schwab.

Carl H. L. Flintermann, vice president of the Detroit Pressed Steel Co., has been appointed chairman of the forgings and stampings division of the war industries board district of Michigan which includes Wayne, Oakland and Monroe counties. M. J. Murphy is district chairman of the board. A. A. Templeton, president of the Detroit Seamless Steel Tubes Co., is state adviser of the resources and conversions section of the war industries board under which the counties are being organized for participation in war industrial work.

E. P. Dillon, manager of the power division of the New York office of the Westinghouse Electric & Mfg. Co., has resigned to become general manager of the Research Corp., New York. Mr. Dillon came to the Westinghouse company in 1909, having been previously connected with various mining and electrical companies, in Colorado. In 1917 he was transferred to the New York office as manager of the railway and power divisions. For several years he was assistant to manager of the railway and lighting department at East Pittsburgh, Pa., being in charge of power house and apparatus works.

W. C. Root has resigned as chief engineer for Julian Kennedy to enter the employ of Arthur G. McKee & Co., Cleveland, as office engineer. Mr. Root graduated from Massachusetts Institute of Technology in 1903. His first position was in the operating department of the Illinois Steel Co. at South Works. In 1904 he entered the employ, in the engineering department, of the Lackawanna Steel Co., Buffalo, where he remained until he became associated with Julian Kennedy as office and outside engineer. He was appointed chief engineer in 1913, which position he has held until the present time.

# Iron and Steel Men in War Machine

## Andrew Wheeler, Assistant Steel Director, Handling Steel Stocks

ANDREW WHEELER is the "stock" man of the government. As assistant to J. Leonard Replogle, director of steel supply, he looks after the distribution through the jobbers, so that iron and steel shall flow through this channel only to such uses as the government holds are essential in wartime; also that the organization, intimate contact and general knowledge of the trade and its requirements built up by the jobbers shall be put to the most valuable use in the present times of stress. This sounds like a big job and it is. It requires the broad experience acquired from years of merchandizing spent in serving many buyers, large and small, with a wide assortment of iron and steel products. It has been said that a jobber knows far more about the ins and outs and special needs of the consumers than the furnace or the mills. Mr. Wheeler possesses those qualifications of training and of business perspective that are needed to properly execute the job which the government has assigned him.

It took the Washington authorities sometime to determine to their own satisfaction to what extent the iron and steel jobbers were essential and useful to the operations of the war machine. Repeated conferences ensued before the cardinal point was firmly and convincingly established in the official mind that the warehouses were rendering an exceedingly important function. They have been and still are a recognized aid to the preservation of high production of war material. Many a job of a vitally essential character has been speedily put through by drawing upon jobbers' stocks for odd pieces and sizes of steel and other supplies the delivery of which by the producers would have been a matter of indefinite delay. Many a smaller manufacturer performing war work owes his continuous operations to the material that he has been receiving steadily from stock. Their usefulness having been proved, the replacement of jobbers' stocks to the degree that they have been going into wartime necessities, has presented a problem of detail and management. Only within the past two weeks has a working system involving monthly reports, individual pledges, etc., been put in order. Mr. Wheeler devotes his attention to the administration of this plan. He is in charge not only of the stocks of the jobbers but also of the steel for fabricators who have to present similar credentials entitling them to new shipments. He checks up the monthly reports and pledges, the pledges already numbering 5000; he sees to it that the jobbers and fabricators meet all the requirements of the priorities system; finally he fixes the tonnage that shall be restored to stock in each individual case. It is manifest that this is not an easy task. It calls for the exercise of good judgment, fairness and tact.

ANDREW WHEELER

Mr. Wheeler's normal business connection is in the capacity of senior partner of Morris Wheeler & Co., Philadelphia, one of the best known merchant houses in iron and steel in the country. He began his business career with the firm in 1884 with an office position. He was admitted to junior partnership in 1892 and in 1904 became the senior member. He has served as director, secretary and vice president of the Pottstown Iron Co.

# New Cement Record

**Made in Production of Portland in 1917—Prices Also High**

A new record in the production of Portland cement in the United States was set in 1917 according to statistics of the cement industry just issued by the United States geological survey. The production was 92,814,202 barrels, the next highest output, 92,097,131, having been made in 1913. It represented an increase of 1.4 per cent over production in 1916.

The factory price received during the year throughout the country was also high, ranging from $1.22 a barrel in the Lehigh district to $1.69 in the state of Washington, averaging for the whole country $1.354 as compared with $1.103 in 1916.

The total shipments of Portland cement from the mills in 1917 amounted to 90,703,474 barrels, valued in bulk at the mills at $122,775,088. These figures represent a decrease in quantity of 4.1 per cent and an increase in value of 17.8 per cent compared with shipments and values in 1916. The combined shipments of natural and puzzolan cements in 1917 were 639,456 barrels, valued at $435,370, representing a decrease in quantity of 24.1 per cent and an increase in value of 10 per cent compared with 1916.

Hydraulic cement exported from the United States in 1917 totaled 2,586,215 barrels, valued at $5,328,536, or $2.06 a barrel, compared with 2,563,976 barrels, valued at $3,828,231, or $1.49 a barrel, in 1916. Imports in 1917 amounted to 2323 barrels compared with 1836 barrels in 1916.

## $1,200,000,000 Munition Contracts in Canada

Toronto, Ont., Aug. 17.—The imperial munitions board in Ottawa has issued an official statement that the total value of contracts for shells, raw materials and supplies of various kinds awarded in Canada up to May 31 was $1,200,000,000, of which not less than $1,000,000,000 had been paid out by the board. Of the expenditure, $664,300,000 was for 59,390,000 shells, ranging in caliber from the 18-pounder to the 9.2-inch. Fifteen per cent of the total expenditures of the British government for munitions during 1917 was spent in Canada. Four hundred and fifty factories are engaged in the production of munitions in the dominion, 150 machining the steel shells and assembling parts made by the others. From 50,000 to 80,000 tons of steel and from 1,500,000 to 2,000,000 forgings are handled monthly by the imperial munitions board. Up to July 31 approximately 2,100,000 tons of steel had been received and distributed by the steel department of the board. The board has also arranged contracts in Canada on behalf of the American government for the machining of approximately 11,000,000 shells and the manufacture of 13,000,000 forgings.

A striking example of conservation is contained in the report. In making the turnings on the copper driving bands of shells a large quantity of scrap was accumulated. This was refined and cast into ingots and 10,000 tons of copper valued at $5,000,000 was reclaimed. Steel scrap is being recovered at the rate of $6,000,000 worth a year. British Forgings, Ltd., a subsidiary organization of the board, operates what is said to be the largest electric steel plant in the world in Toronto where steel scrap from hundreds of munitions plants in Canada is converted into ingots and forgings. Operations began in July, 1917, and the present monthly capacity of the plant is about 5000 tons of shell steel. Up to May 31, 900,000 six-inch shell forgings had been produced, in addition to 69,500 9.2-inch shell forgings.

The demand for zinc and copper required in munitions led to an investigation in 1915 to ascertain the feasibility of refining copper and producing zinc in the dominion. This resulted in the establishment of the copper refining industry in Canada and a zinc plant was erected by the Consolidated Mining & Smelting Co., Trail, B. C., at a cost of $2,500,000. The daily production of zinc was increased from 1000 pounds to 50 tons a day. The present annual output of zinc and copper plants in Canada is approximately 12,000 tons of zinc and 6700 tons of refined copper.

The two batteries of Wilputte coke ovens, comprising 40 ovens each, being installed by the Steel Co. of Canada at Hamilton, are nearly complete. The first battery is expected to be producing coke by Nov. 15, and the second a month later. When in operation they will produce between 800 and 900 tons of coke per day.

The United States Steel Corp. has increased the wages of its employes seven times since January, 1916, and the wages are now 103.7 per cent higher than they were at that time.

The Motors Metal Mfg. Co., Detroit, Mich., plans to erect an addition, 65 x 260 feet. The company manufactures trucks, tractors, automobile accessories and stampings, and at present is devoting 70 per cent of its output to building trucks for the signal corps and ¾-ton ambulances. Additional factory space is necessary because of a large war contract.

## To Build Ten Drydocks

To keep the rapidly-growing merchant fleet in constant commission, the Emergency Fleet corporation is making arrangements for the construction within a year of 10 drydocks equipped with facilities for making repairs. Seven will be floating docks and are to be delivered within 10 months, the three others are to be finished in the last two months of the year. Vice President Piez expects soon to sign contracts for two 10,000-ton drydocks or their equivalent in an L-shaped dock to be located on the Delaware river near Philadelphia, and for a 10,000-ton dock at Paulsboro, Pa. The corporation may build the docks if it cannot arrive at satisfactory contracts with the companies interested, or it may decide to add two graving docks of 100 feet and 750 feet to the facilities of the navy yard, such facilities to be open to merchant vessels. The corporation has practically closed contracts for two 750-foot docks at Norfolk, Va., private capital will provide the land and repair shops and the Fleet corporation will pay for the docks.

## Large Output Expected

Detroit, Aug. 19.—The first year of large-scale production of Fordson tractors at the Dearborn plant of Henry Ford & Son is expected to reach a total of $28,000,000 in sales. During July the average production was 150 tractors a day. For the last six months of 1918 production is estimated at between 22,000 and 25,000.

The Great Lakes Engineering Works, Ecorse, Mich., now claims the world's record for speed in ship construction. The company completed a 3500-ton steel vessel in 14 days. Recognition of the achievement has been received by the employes of the plant from Charles M. Schwab, director general of the United States shipping board. The former record was held by the New York Shipbuilding Co., which completed the steamer TUCKAHOE in 27 days.

The General Motors Corp. has purchased an interest in the Doehler Die Castings Co., of Toledo, Brooklyn and Newark. An aluminum foundry is being erected at Flint, Mich., to

be operated in conjunction with the Doehler plants.

The Western Electric Co., is building a 3-story addition to its warehouse.

The Bass Construction Co., has the steel contract for the 10-story addition to the J. L. Hudson Co. store.

The Michigan Copper & Brass Rolling Mills has let the contract for its foundry building to Westinghouse, Church, Kerr & Co.

The American Blower Co., is erecting an addition to its plant. A. J. McLean & Co., are the general contractors.

The Detroit Copper & Brass Rolling Mills will remodel its factory and erect a 1-story addition. The Cooper-Wideman Co., has the general contract.

## Forms Chinese Company

The Grace China Co. is the name of a new subsidiary of W. R. Grace & Co., New York, just organized to consolidate under one management the various Grace interests in China. The company is incorporated under the laws of Delaware with capital of $500,000 and its officers are: President, Joseph P. Grace, president of W. R. Grace & Co.; vice presidents, John H. Rosseter, for many years head of the Pacific coast interests of W. R. Grace & Co., and now director of operations of the United States shipping board, and Robert H. Patchin; treasurer, J. Louis Schaefer; secretary, H. J. Roig. All the officers and directors are prominent in the Grace organization. Stewart P. Elliott, managing director, was until last winter head of the Russian offices of W. R. Grace & Co., with headquarters in Petrograd. His headquarters in his new post will be at Shanghai. He now is on his way to China. Other offices will be located at Hankow and Tientsin.

# Ask Furnaces to Furnish Fuller Data

PRODUCERS of pig iron are called upon by the war industries board effective Sept. 1, to amplify the data regarding their order books, shipments, etc., in the reports now being returned by them monthly. To that end, a modified form upon which the producers are to make their reports, has been adopted by the war industries board. This form is shown in the accompanying reproduction.

In the new reports starting with September, the information is to be returned in a more consolidated way. The requirements of the various departments of the government, which appear individually in the present reports, are to be merged into the classifications of direct government and indirect government tonnage. Direct government tonnage is defined as such tonnage as the government has purchased, either by allocation or otherwise and for which it will itself make payment. Indirect government tonnage refers to allocations for other than direct tonnages as so defined and to all tonnage entering into government work whether a consumer holds a direct order from the government or an indirect order through other channels. Similar definitions apply to direct and indirect allied government tonnages.

Another addition to the report concerns shipments made during the month divided as to essential and less essential tonnage. Unfilled tonnage on the books of the furnaces also is to be so separated as to show the obligations for the remainder of 1918 and those for delivery after Dec. 31 of the present year.

NAME OF COMPANY
LOCATION

MONTHLY REPORT

REPORT FOR MONTH ENDING

FORM 800

**WAR INDUSTRIES BOARD, WASHINGTON, D. C.**

PIG IRON, FERROMANGANESE, Etc.

ALL IN GROSS TONS

| | BASIC | BESSEMER | FOUNDRY | MALLEABLE | FOR SALE | CHARCOAL | SPIEGELEISEN AND SILVERY | SPECIAL GRADES (ENUMERATE) | ANY IRON | GRAND TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 Unfilled Tonnage Brought Forward from Last Month | | | | | | | | | | |
| 2 Sales During Month | | | | | | | | | | |
| 3 Total Unfilled Tonnage | | | | | | | | | | |
| 4 Tonnage Shipped During Month | | | | | | | | | | |
| 5 Tonnage Canceled During Month | | | | | | | | | | |
| 6 Total Unfilled Tonnage at End of Month — For Delivery over Remainder of 1918 | | | | | | | | | | |
| 6 Total Unfilled Tonnage at End of Month — For Delivery after Dec. 31st, 1918 | | | | | | | | | | |
| 7 Tonnage Produced During Month | | | | | | | | | | |
| 8 Estimated Production over Remainder of 1918 | | | | | | | | | | |
| 9 Stock on Hand | | | | | | | | | | |
| 10 Stock of OUR Iron in CUSTOMERS' Yards and in Transit to Them | | | | | | | | | | |
| 11 Total Direct Government Tonnage on Books — For Delivery over Remainder of 1918 | | | | | | | | | | |
| 11 Total Direct Government Tonnage on Books — For Delivery after Dec. 31st, 1918 | | | | | | | | | | |
| 12 Total Indirect Government Tonnage on Books — For Delivery over Remainder of 1918 | | | | | | | | | | |
| 12 Total Indirect Government Tonnage on Books — For Delivery after Dec. 31st, 1918 | | | | | | | | | | |
| 13 Total Direct Allied Government Tonnage on Books — For Delivery over Remainder of 1918 | | | | | | | | | | |
| 13 Total Direct Allied Government Tonnage on Books — For Delivery after Dec. 31st, 1918 | | | | | | | | | | |
| 14 Total Indirect Allied Government Tonnage on Books — For Delivery over Remainder of 1918 | | | | | | | | | | |
| 14 Total Indirect Allied Government Tonnage on Books — For Delivery after Dec. 31st, 1918 | | | | | | | | | | |
| 15 Total Undelivered Tonnage on Books Considered Essential — For Delivery over Remainder of 1918 | | | | | | | | | | |
| 15 Total Undelivered Tonnage on Books Considered Essential — For Delivery after Dec. 31st, 1918 | | | | | | | | | | |
| 16 Total All Other Undelivered Tonnage on Books Not Included Elsewhere, Considered Less Essential — For Delivery over Remainder of 1918 | | | | | | | | | | |
| 16 Total All Other Undelivered Tonnage on Books Not Included Elsewhere, Considered Less Essential — For Delivery after Dec. 31st, 1918 | | | | | | | | | | |
| 17 Total Direct Government Shipments during Month | | | | | | | | | | |
| 18 Total Indirect Government Shipments during Month | | | | | | | | | | |
| 19 Total Direct Allied Government Shipments during Month | | | | | | | | | | |
| 20 Total Indirect Allied Government Shipments during Month | | | | | | | | | | |
| 21 Total Shipments during Month, of Tonnage Considered Essential | | | | | | | | | | |
| 22 Total Shipments during Month, of Tonnage Considered Less Essential | | | | | | | | | | |

23 Total Number of Furnaces (_____) Number of Furnaces in Blast (_____)

If Output is Reduced, State Cause (_____)

Send Original, not later than 10th of EACH MONTH to J. LEONARD REPLOGLE, Director of Steel Supply, War Industries Board, Washington, D. C.

Send Duplicate not later than 10th of EACH MONTH to H. G. DALTON, Chairman, Sub-Committee on Pig Iron, Iron Ore and Lake Transportation, 800 Western Reserve Building, Cleveland, Ohio.

SIGNED _____

BY _____

"Direct Government Tonnage", (so far as blast furnaces are concerned), refers only to such Tonnage as the Government has purchased, either by allocation or otherwise, and For Which it will Itself Make Payment.

"Indirect Government Tonnage" (So far as blast furnaces are concerned) refers to allocations for other than Direct Tonnages as above defined, and to all Tonnage entering into Government Work, whether consumer holds a direct order from the Government or an indirect order thru other channels.

Direct and Indirect Allied Government Tonnages are similarly defined.

In all cases, Past Due Tonnages are to be included in figures providing for "Delivery over remainder of 1918".

IT IS ESSENTIAL

That this report be mailed in whole or on or before the tenth of every month, for the previous calendar month's business, and in the event of failure or inability to secure by the eighth day of month, necessary data from all customers with whom you have orders, your report should, nevertheless, be CLOSED at specified date with non-reporting customers as heretofore stated.

NEW FORM ADOPTED FOR MONTHLY PIG IRON REPORTS

# Tool Trade Outlook Encouraging

**After-the-War Prospects Discussed by Dealers With Concensus of Opinion That Business Will Continue Strong—Few New Inquiries for Large Supplies—Auto Manufacturers, Obeying Order, Buy New Equipment**

THE past week with its apparent dearth of inquiries for large quantities of machines and tools, in contrast with those of the previous period, has set manufacturers and dealers to speculating on the outlook of the trade immediately after the war, especially as the Kaiser and his satellites have decided to end the war "by Christmas," but perhaps not in the way they would like.

Some dealers in the Cleveland field who have been rushed to supply the enormous demand are inclined to take a pessimistic view of the situation. Machines and tools have come on the market in such a flood that they believe the supply will be adequate to the demand for a considerable period after hostilities. They take the view that so many plants have been equipped way beyond the normal requirements that the supply will exceed the demand, and, consequently, that prices will drop.

Another view of the situation expressed by some of the leading dealers is that the present heavy demand will continue long after the struggle and this opinion is pedicated on the assumption that a vast amount of supplies of all kinds will be required in the rebuilding of Europe and that the machine and tool trade will come in for its fair share of the business. They point out that European manufacturers are in no position to produce machines and tools on the necessary scale and that they must be supplied by Americans, who then will have greater facilities for readily undertaking this class of work. These same optimists take another view of the automobile business and its relation to the trade after the war. While the automobile business is expected to develop greater proportions than ever before owing to the present interruption to normal production, it is pointed out that the builders will require much new equipment to supply demands. The concensus of opinion seems to be that the present and future outlook for the trade is gratifying.

Dealers during the past week were kept busy on old lists, there being few new inquiries of any magnitude. One of the largest was that from the Interborough Rapid Transit Co., New York, for $50,000 worth of miscellaneous equipment. The H. R. Worthington Co., Harrison, N. J., sent out inquiries for eight radial drills and five horizontal boring machines. The Seaboard By-Product Coke Co., Seaboard, N. J., has arranged to increase its plants and is in the market for special equipment, while the American Locomotive Co., New York, expects to be in the market shortly for a large amount of miscellaneous supplies.

Eastern dealers are still concentrating their efforts toward supplying the Neville island and Watervliet arsenals with equipment, while in the Cleveland district the principal inquiries come from automobile manufacturers who are converting their plants for the production of war material in conformity with the war industries' board order. They are making every effort to cope with the new situation.

# Eastern Market Slow; Few Large Lists

LITTLE business of note has developed in the eastern machine tool market during the past few days; in fact, the market as far as new inquiries are concerned appears the slowest in several weeks. Even the miscellaneous demand which generally is the backbone of the market in times of relative dullness, has not been up to its usual volume. Included in the comparatively few sizable inquiries of the past week is a list issued by the Interborough Rapid Transit Co., involving about $45,000 to $50,000 worth of equipment. The list is practically a duplicate of the one issued a couple of months ago, but later withdrawn. The Henry R. Worthington Co., Harrison, N. J., is inquiring for eight radial drills and five horizontal boring machines. The Benford Mfg. Co., Mt. Vernon, N. Y., is in the market for some additional equipment needed in the manufacture of spark plugs. The Seaboard By-product Coke Co., Seaboard, N. J., will increase its plant considerably, and will need some cranes and special equipment. The Lionel Mfg. Co., Irvington, N. J., is inquiring for a few machine tools. The American Locomotive Co., New York, is to be in the market shortly for some miscellaneous equipment, C. U. Cavanugh, La Salle. N. J., contemplates the construction of a plant for the manufacture of spark plugs and has sent out tentative inquiries.

Buying for the new plant to be erected by the Otis Elevator Co., New York, has now been completed, the original list having been considerably reduced. The purchases as they stand amount to about $200,000. The Sun Shipbuilding Co., Chester, Pa., which has been planning the construction of a marine boiler plant, has definitely given up this project and has cancelled orders for equipment. The remaining two projects in the east of this nature, those of the Barber Asphalt Paving Co. and the Newport News Shipbuilding & Dry Dock Co., are going ahead. The Barber company, in addition to its recent purchasing of 17 electric cranes, has bought

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***"AGATHON"***
***Chrome Vanadium***
***"AGATHON"***
***Nickel Steels***
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***Special Analyses***
***"AGATHON"***
***Vanadium***
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***Chrome Steel***
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***High Carbon***

## The Central Steel Co.

**Massillon, Ohio** ***Agathon City***

**SALES OFFICES:**

**Detroit Office:** 326-27-28 Ford Bldg.,
F. Walter Guibert, District Representative

**Cleveland Office:** Hickox Building,
The Hamill-Hickox Co., District Representative

**Chicago Office:** 1370 Peoples Gas Building,
122 So. Michigan Blvd.,
C. H. Beach, District Sales Manager

**Philadelphia Office:** 603 Widener Bldg.,
Frank Wallace, District Sales Manager

**Syracuse Office:** 621 University Block,
T. B. Davies, District Sales Manager

**J. E. Dockendorff & Co.:** 20 Broad St.,
New York, General Export Agent

up to the present time about $75,000 worth of machinery equipment.

The requirements of the Newport News Shipbuilding Co. will be covered shortly. A large buyer of late has been the Watervliet arsenal, Watervliet, N. Y., which has closed on more than $150,000 worth of equipment and which is expected to place shortly a larger order.

*Sellers Busy in Pittsburgh*

LITTLE of interest has developed during the past week in machinery in the Pittsburgh district. Sellers generally are busy, requirements running largely on government work being heavy and taxing to a considerable extent the capacity of the manufacturers. Raw materials for this class of work get high priority classification and the manufacturers, being unhampered for want of materials, are making fairly good deliveries. On new business, no specified delivery can be guaranteed except on small tools and only the smallest of these can be shipped out in less than 90 days. Demand for this latter class of stock, however, is rather slow and users are pretty well filled for the present. The Neville island gun plant machinery and tool specifications have yet to make their appearance. The Mesta Machine Co., Pittsburgh, reports orders for a horizontal blowing engine, 42 x 84 and 84 x 84 x 60 inches from the Pittsburgh Crucible Steel Co., for its blast furnace at Midland, Pa.; two horizontal blowing engines, 34 x 72 and 84 x 84 x 48 inches from the Weirton Steeel Co., Weirton, W. Va., and also a vertical blower, 44 x 84 x 60 inches, from the Struthers Furnace Co., Cleveland, tor its plant at Struthers, O. These engines are all high speed autoplate valve engines of the Iverson type.

*Chicago Market Continues Active*

CONTINUED activity prevails in the machine tool trade in this district, although large buying is not the rule. Scattered orders to fill in equipment make up most of the demand. Railroads are taking some tools, the change from the former methods of buying to those provided by the new control apparently having been completed, releasing much business that had been held up temporarily.

Enlarged activities in war manufacturing which have been coming to the west in recent weeks keep up demand for additional equipment to handle the work. Winslow Bros. Co., Chicago, have added a heat treating department to the shell plant. The Wood Equipment Co., manufacturer of mining machinery, has bought two parcels of land, about 500 x 200 feet in all, improved with buildings which will be remodeled and equipped for manufacturing. The Iroquois Iron Co., recently merged with the Steel & Tube Co. of America, is building a machine shop at its South Chicago plant. Whiting, Ind., is about to build a filtration plant involving four centrifugal pumps of 3,000,000 and 5,000,000 gallons per day capacity. The American Car & Foundry Co. will build a machine and pattern shop at St. Charles, Mo. The Carter Iron & Steel Co., Ft. Dodge, Iowa, will build a plant.

*Auto Builders' Inquiries Feature Market*

THE order of the war industries board to the automobile industry to discontinue the building of pleasure cars and change to a war basis by Jan. 1, 1919, if it desires to obtain steel resulted in many inquiries in the Cleveland district from manufacturers who have been prompt in heeding the warning. The majority of inquiries came from such sources, practically all automobile plants requiring special equipment. Aside from this the market is inclined to be featureless, with dealers endeavoring to catch up with previous orders and pointing out that production is extremely slow in comparison with the heavy demand. Some large inquiries have appeared from the H. R. Worthington Co., Harrison, N. J., which is in the market for radial drills and boring machines, and the Interborough Rapid Transit Co., of New York, for $50,000 worth of equipment.

# New Construction and Equipment

**Concise and Timely Business Building Opportunities from the Field of Industry**

## Among New England Factories

BANGOR, ME. — The Penobscot Foundry Co. will build a fireproof iron smelting plant.

PORTLAND, ME.—The American Can Co. has purchased 10 acres and will build a factory 400 feet long.

PORTLAND, ME.—The Shaw Hand Grenade Co. has been incorporated with $200,000 capital by Irving E. Vernon, G. L. Burke and Frederick D. Collins.

PORTLAND, ME.—The Economy Squeezer Co. has been incorporated to make tools with $10,000 capital by Charles W. Conant, Robert Braun and M. McGray.

ROCKLAND, ME.—The Dunn & Elliott Co. has been incorporated to build ships with $200,000 capital by Richard O. Elliott, Frank D. E. Elliott and Arthur J. Elliott, Thomaston, Me.

TRENTON, ME.—The contract has been let for a bridge between Trenton and Eden, Mt. Desert island, to cost $100,000. The Boston Bridge Works, Inc., Boston, has the contract for the steel draw.

AMHERST, MASS. — A $56,000 turbine house and coal handling plant will be installed at the Massachusetts Agricultural college.

BOSTON.—Fire damaged the factory of the Sargent & Ham Co. Aug. 4, to the extent of $50,000.

BOSTON.—Plans have been completed for an extension to the machine shop and foundry at the Charlestown navy yard to cost $900,000.

BOSTON.—The Beach Mfg. Co. has been incorporated to make machinery with $150,000 capital by Charles L. Beach, Chester T. Murphy, Brookline, Mass., and E. Frazer.

BOSTON.—The Couch Turbine Mixer Co., Inc., has been incorporated with $50,000 capital by Charles A. Couch, George E. Richards and H. K. Rising.

BOSTON.—The government let the contract to the Guarantee Construction Co., New York, for a fuel depot for the navy department, to cost $160,000.

BOSTON.—The Acme Ventilator Corp. has been incorporated with $100,000 capital by Fred Hertach, Cliftondale, Mass.; Francis

# WAR SAVINGS STAMPS

G. Fay and John H. Devine, Winthrop, Mass.

BOSTON. — The Yankey Mfg. Co. has been incorporated to make keys, locks, dies and machinery with $4000 capital by William Epstein, Morris Silverstein and Eli Epstein.

BOSTON.—The Ston-Craf Co. has been incorporated to make electrical appliances, etc., with $25,000 capital by Arthur E. Bissell, Joshua D. Robinson and H. F. Livermore.

BROCKTON, MASS.—The erection of a power plant is being contemplated by the Walk-Over Shoe Co.

DEARFIELD, MASS. — A $75,000 engine house will be erected at this point by the Maine Railroad Co.

LAWRENCE, MASS.—The Katama Mills has let the contract for a 2-story, 40 x 50-foot office building and a 40 x 72-foot garage.

MILFORD, MASS. — The Hopedale Mfg. Co. let the contract for a 1-story, 30 x 70-foot shipping and storage building.

NEW BEDFORD, MASS.—The New Bedford Cordage Co. will build a 30 x 65-foot storehouse.

NORTH ANDOVER, MASS.—The Brightwood Mfg. Co. let the contract for a 2-story, 93 x 108-foot addition to its weave shed to cost $75,000.

NORTH WEYMOUTH, MASS. — The Brook-Skinner Co., maker of steel garages, is building a 2-story, 40 x 90-foot, and 8 x 20-foot addition.

SOUTH BRIDGE, MASS.—The American Optical Works awarded E. J. Cross, Worcester, Mass., contracts for the erection of a 2-story, 79 x 202 foot warehouse.

UXBRIDGE, MASS. — The New England Power Co. has let the contract to the E. D. Ward Co., Worcester, Mass., for an extension to its power house to cost $75,000.

WINCHESTER, MASS.—The Winchester Tool Co. has been incorporated with $25,000 capital by Alfred C. Routhier, Harold E. Ball and A. W. Jadis.

WORCESTER, MASS.—The American Steel & Wire Co. has let the contract for a 30 x 32-foot extension to its industrial museum building.

WORCESTER, MASS. — The government has let the contract to the E. J. Cross Co. for a brick, 1-story, 125 x 140-foot shell factory.

WORCESTER, MASS. — The roundhouse, machine shop and storage plant of the New York, New Haven & Hartford railroad, for which Fred T. Ley & Co., Inc., Springfield, Mass., has the contract, will be 190 x 200 feet and cost $150,000.

CENTRAL FALLS, R. I. — The Bryan-Marsh Electric Works of the General Electric Co. will build a brick and concrete, 2-story wheel house, a 1-story, addition to its engine house and make other alternations at the plant.

PAWTUCKET, R. I.—Plans are being figured for a concrete block, mill construction, 1-story, 100 x 120-foot and a 2-story, 40 x 120-foot building on Broadway for the Automobile Journal Publishing Co.

PROVIDENCE, R. I.—The Aldrich Bros. Co. has been incorporated with $3,000,000 capital by Henry L. Aldrich, Charles T. Aldrich and William T. Aldrich, Plainfield, Conn., and will build a general textile plant here.

PROVIDENCE, R. I.—The Edgewood Garage let the contract for a concrete, 1-story, 45 x 52-foot machine shop.

PROVIDENCE, R. I.—The Colvin Foundry Co has let the contract for a reinforced concrete, 2-story, 28 x 38-foot addition.

PROVIDENCE, R. I. — The Brown & Sharpe Mfg. Co. awarded a contract to William H. Hamlyn & Son, for the erection of a $40,000 plant addition, 64 x 175 feet.

BRIDGEPORT, CONN.—The Chapman & Bangs Co., heavy hardware, will build a brick, mill construction, 3-story, 39 x 87-foot and 24 x 58-foot storage building to cost $30,000.

BRIDGEPORT, CONN. — The Bridgeport Tool & Gage Co. has been incorporated with $25,000 capital by Henry A. Mailand, Albert Kasica, Michael Luzaszewski, Charles A. Roscoe, Czeslaw Sliwornik and Waslaw Przywarski.

CHESTER, CONN.—The Middlesex Mfg. Co. has been incorporated to make brass, metals, etc., with $25,000 capital by Robert Wilcox and Frederick E. Scannell, both of New York, Henry F. Shailer, Samuel B. Shailer, Edgar L. Walker and Jacob C. Edwards.

DANBURY, CONN. — The Mutual Fur Cutting Co. let the contract for a brick, 1-story, 40 x 66-foot addition.

HARTFORD, CONN.—The plant of the Connecticut Electric Steel Co. recently was badly damaged by fire.

HARTFORD, CONN.—The Nielson & Wilson Tool Co. has been incorporated with $15,000 capital by William E. Baker, New Britain, Conn., Albert E. Wilson, Frederick A. Hart and Oscar T. Neilson.

HARTFORD, CONN.—The American Tool Works has been incorporated with $20,000 capital by John A. Sundkvist, M. Sundkvist, Frank L. Lindstrom and A. Lindstrom, Bridgeport, Conn.

NEW BRITAIN, CONN.—The Union Mfg. Co. will erect a steel building.

STAMFORD, CONN. — Bids have closed for a reinforced concrete, fireproof, 6-story, 50 x 261-foot building for the Yale & Towne Mfg. Co.

STAMFORD, CONN.—Baer Bros. have let the contract for a steel and reinforced concrete, 5-story, 76 x 114-foot storage warehouse.

STAMFORD, CONN. — The general contract for the construction of a 6-story, 76 x 114-foot warehouse has been awarded by Bard Bros., 438 West Thirty-seventh street, New York, to Thompson & Binger, Inc., 280 Madison avenue, New York.

WALLINGFORD, CONN.—R. Wallace & Sons will build a $25,000 factory building to be 40 x 100 feet.

## Business Changes

*The E. H. Mumford Co.*, Elizabeth, N. J., manufacturers of molding machines, has removed its plant and main office to Dayton, O., and has changed its name to the Dayton Molding Machine Co.

*The Standard Electric Tool Co.*, Cincinnati, will remove its plant this fall from 128 Opera place to the former plant of the Kirk & Blum Co., Western avenue, opposite the Cincinnati ball park. The company's office will remain at 128 Opera place until March 1, 1919.

*The Velick Scrap Iron & Machinery Co.*, of Detroit, has opened branch office in the Society for Savings building, Cleveland, with S. G. Cornsweet as manager.

*The Gas Traction Foundry Co.*, of Minneapolis, has changed its name to the Northwestern Steel & Iron Corp., the management and policy of the business remaining unchanged.

*The Thomas A. Edison Co., Inc.*, primary battery division, has moved its San Francisco office from the Crocker building to 1205 Hobart buildng. E. W. Newcomb is manager.

# Along the Middle Atlantic Seaboard

ALBANY, N. Y.—Plans have been completed for a $15,000 addition, 52 x 100 feet to the machine shop of George H. Thatcher & Company.

BROOKLYN, N. Y.—Bids are being received by the Modern Toy Co. on a $20,000 1-story, 96 x 150-foot factory building.

BROOKLYN, N. Y.—The contract for a 1-story, 160 x 200 x 240-foot factory building has been awarded by the Realty Associates, 162 Remson street, Brooklyn, to the Turner Construction Co., New York.

BROOKLYN, N. Y.—E. Barhinger, Inc., 315 East Fifty-seventh street, New York, has awarded the contract to Fred Weber for the erection of a $20,000 machine shop. Plans call for a one and 2-story building, 147 x 250 feet.

BUFFALO.—The Pierce-Arrow Motor Co. is receiving bids on the construction of a 1-story, 50 x 100-foot testing building.

BUFFALO.—An enlargement of the core room at the Atlas Steel Castings Co., to cost $10,000, is being contemplated.

BUFFALO. — The Automatic Transportation Co. recently obtained a permit from the city building department to erect a 3-story plant to cost $40,000.

BUFFALO.—The American Purchase Sales Corp. has plans for three 1-story brick struc-

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and you would be interested in procuring castings with which you would have a

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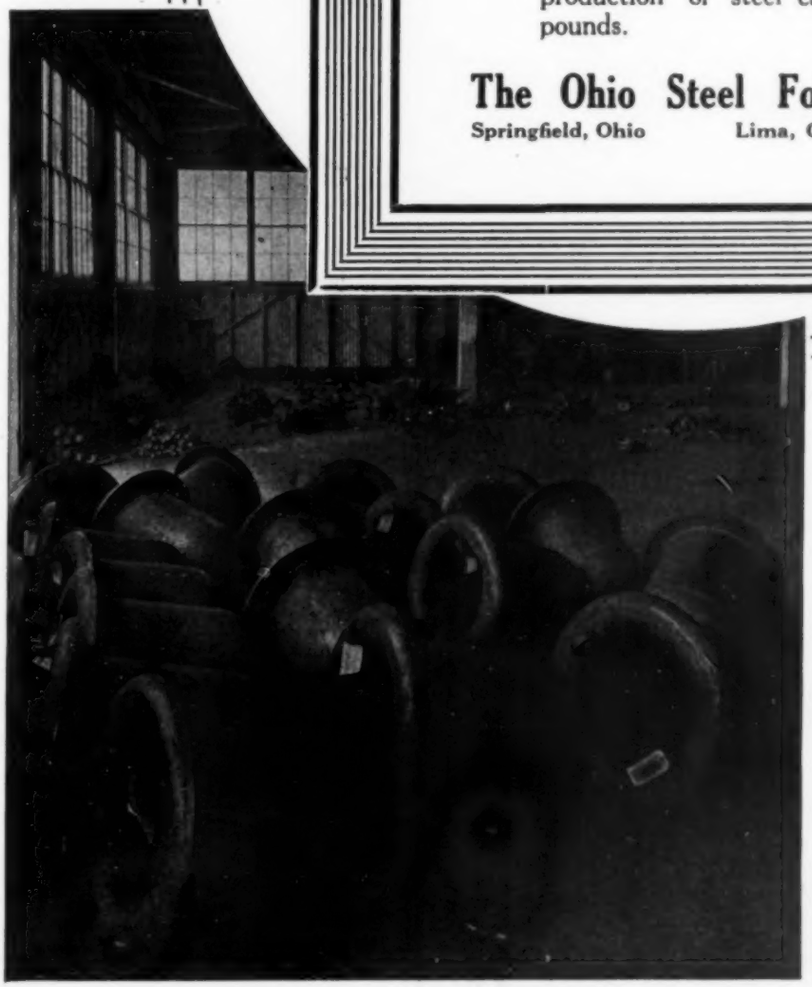
Our Springfield Plant is the best equipped and most modern in the country for the production of steel castings up to 250 pounds.

**The Ohio Steel Foundry Company**
Springfield, Ohio Lima, Ohio Bucyrus, Ohio



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tures to be erected immediately.

BUFFALO.—A $300,000 power house addition will be erected by Stone & Webster, Boston, for the Pierce-Arrow Motor Co.

BUFFALO.—The Air Reduction Sales Co. has completed plans for a 1-story, 60 x 100-foot factory building.

COLLEGE POINT, L. I., N. Y. — A 2-story, 50 x 165-foot factory building will be erected by Victor R. Browning & Co.

DUNKIRK, N. Y.—The American Locomotive Works will build additions.

GENEVA, N. Y.—The Cutler Co. will erect a 1-story, 40 x 60-foot storage building.

KAIG, N. Y. — The Page Metal Co., Rochester, N. Y., will build a plant here.

NEW YORK.—A $45,000 addition to his storage building will be erected by Henry I. Stetler, 529 Washington street, New York. It will be 60 x 100 feet.

NEW YORK.—The Atlantic Nail & Wire Co. has purchased the distribution station of the Du Bois Brewing Co., Newark, N. J., in which to manufacture nails and drawn wire.

NIAGARA FALLS, N. Y.—The Electric Chemical Co. will build a 2-story addition, 30 x 251 feet. Architect Robert C. Fayfield, Buffalo, is drawing the plans.

ROCHESTER, N. Y.—The American Railway Express Co. will construct a $20,000 warehouse, 1-story, 31 x 150 feet.

ROSSMAN, N. Y.—An 80 x 120-foot mill will be erected here by the Hoboken Pulp & Paper Co., Hoboken, N. J.

SYRACUSE, N. Y.—Contracts for an engine house and yard shops for the New York Central railroad were awarded to Wm. Ballard, Oneida, N. Y.

TARRYTOWN, N. Y.—The Chevrolet Motor Co. has awarded contracts for the construction of a 4-story, 40 x 80-foot factory building to the White Fire Proofing Co., New York.

TONAWANDA, N. Y. — The McKinnon Chain Co. contemplates the erection of a plant in this city. F. A. Shoemaker, Builders Exchange, Buffalo, is drawing the plans.

TROY, N. Y.—Plans for additions costing $20,000 to the plant of George E. Smith have been placed in abeyance.

WATERVLIET, N. Y.—This city will vote soon on a bond issue of $175,000 for improvements to the waterworks.

ARDMORE, PA.—The Auto Car Co. is receiving bids on a 1-story, 75 x 125-foot addition to its heat treating building.

ERIE, PA.—Building Inspector McManus has received plans for a $10,000 addition to the plant of the German Bronze Co.

ELLWOOD CITY, PA. — The Mathews Gravity Carrier Co. has started work on a plant 50 x 175 feet.

ERIE, PA.—The Superior Bronze Co. has arranged to build a foundry here.

FORT MIFFLIN, PA.—C. W. Parks, chief of the bureau of yards and docks, Washington, is having plans drawn for a $28,000 storage house to be erected here.

KANE, PA.—The Big Level Coal Co., capital $25,000, has been incorporated by Walker S. Campbell, Amos F. Cupp, J. A. Stoll, William Lind, Julius Carison, Albian Bengston, Kane; Fred Newton, Lafayette.

MORRISVILLE, PA.—A $300,000 molding plant will be erected here by the Pennsylvania railroad.

PHILADELPHIA.—Architect E. N. Greisler is ready for bids on a 2-story, 74 x 100-foot warehouse.

PHILADELPHIA.—The contract for the $16,000,000 terminal to be erected here by the quartermaster's department was awarded to Snare & Triest, Philadelphia.

PHILADELPHIA.—A $95,000 power plant 50 x 75 feet, will be erected by the Turner Construction Co., New York, for the Pennsylvania Chocolate Co.

PHILADELPHIA.—The Barrett Mfg. Co. awarded the contract to the A. R. Raff Co. for the construction of a $48,000 still house, 32 x 80 feet. An $18,000 tank and storage house also will be erected.

PITCAIRN, PA.—The Pennsylvania railroad will build a machine shop, engine house, storage house and ice and oil house here.

PITTSBURGH.—The Pittsburgh Reinforced Brazing & Machine Co. plans an addition of another story to its building. The company will be in the market for equipment.

PITTSBURGH.—The Illinois Improvement & Ballast Co. has the contract for the excavation and foundation for the ordnance plant which the government will build on Neville island.

SHAMOKIN, PA.—The Milton plant of the American Car & Foundry Co. recently was awarded a large war contract, and will enlarge the plant. New machinery also will be installed.

TITUSVILLE, PA.—A. L. Calfisch & Sons Lumber Co. will build a saw mill.

WILLIAMSPORT, PA.—The Williamsport Wire Rope Co. awarded the contract for a $40,000 warehouse, 90 x 200 feet, to the Austin Co., Philadelphia.

BAYONNE, N. J.—The general contract for a 2-story, 60 x 120-foot factory addition for H. F. Taintor, was awarded the Carleton Company.

BELLE MEAD, N. J.—The Philadelphia & Reading railroad plans to build a four-track road and overhead crossings, to cost $125,000.

BOONTON, N. J. — The plant of the Montville Finishing Co. was recently damaged by fire, causing a loss of $75,000.

CAMDEN, N. J.—The public Service Gas Co. has let a contract for a generator building and purifying plant to the Mockett Construction Co.

CAMDEN, N. J.—The New York Shipbuilding Corp. has awarded a contract to the Raymond Concrete Pile Co. for the construction above watermark of new shipways at the new shipyard on Newton creek.

CAMDEN, N. J.—Charles M. Schwab, director-general of the Emergency Fleet corporation, recently announced 12 additional shipways will be built at the Pusey & Jones yards.

CAPE MAY, N. J.—The government has awarded a contract to Cramp & Co., Philadelphia, for 21 buildings, to cost $496,963.

ELIZABETH, N. J.—T. L. Smith & Co. have started work on a $5000 foundry addition.

ELIZABETH, N. J. — E. Allen Wilson, architect, has plans for a housing colony, to cost $100,000.

ELIZABETH, N. J.—C. E. Pollard, government engineer, has begun the work of erecting 204 dwelling houses here for war workmen, for which the government has appropriated $750,000.

JERSEY CITY, N. J.—The Metal & Thermit Corp. will build a $17,000 addition.

JERSEY CITY, N. J.—The Crucible Steel Co. will build a brick and steel, gas reduction plant to cost $85,000.

JERSEY CITY, N. J.—The Manufacturers' Liability Co. will enlarge its factory at a cost of $50,000.

JERSEY CITY, N. J.—The New Jersey Concentration Co. has been incorporated with $25,000 capital to manufacture chemicals, etc., by S. G. Worthen, East Orange, and W. S. Sawyer and A. W. Bailey, of Brooklyn.

KEARNY, N. J.—The Kearny Brass Foundry Co. has been incorporated with $25,000 capital to deal in machinery, the incorporators being S. P. Blauvelt and S. H. Blauvelt, of Kearny, and J. C. Chadwick, of Newark, N. J.

LAWRENCEVILLE, N. J.—The war department will erect a convalescent hospital to cost $40,000.

NEWARK, N. J.—The Ruth Realty Co., 30 Branford street, will erect a one-story brick factory, 60 x 60 feet, to cost $7000.

NEWARK, N. J.—Kauphen & Co., 148 East Kinney street, will make alterations to a brick factory to cost $18,000.

NEWARK, N. J.—The Rubber & Celluloid Co., 423 Wilson place, will erect two storage buildings, 30 x 40 feet, to cost $4000.

NEWARK, N. J.—The Essex Foundry Co. has awarded the general contract for a plant addition to the Enstice Bros. Co.

NEWARK, N. J.—A $30,000 warehouse, 70 x 300 feet, will be erected by the American Oil & Supply Co.

NEWARK, N. J.—The Maas & Waldstein Co., avenue R, will erect a boiler house, 53 x 70 feet, to cost $50,000. The contract has been let to the Henry M. Doremus Co.

NEWARK, N. J.—The Klaxon Co., a subsidiary of the United Motor Corp., recently acquired a 100 x 200-foot plot and plans the immediate erection of a large warehouse.

NEWARK, N J.—The American Oil & Supply Co. will erect a one-story brick, frame and concrete warehouse, 300 x 600 feet, to cost $30,000.

NEWARK, N. J.—Kolb & Sechomel, Inc., have been incorporated with $25,000 capital to manufacture sheet metal flues, by N. L. Kolb, Karl Suchomel and Julius Peyser, all of Newark.

NEW BRUNSWICK, N. J.—The Wright-Martin Aircraft Corp. has taken over the Wasson piston ring plant for additional space for the manufacture of aeroplane motors. The rooms of the marine foundry also will be utilized.

PASSAIC, N. J.—The Manhattan Rubber Co. let a contract to the Austin Co., Cleveland, for a factory building, 60 x 208 feet.

BALTIMORE.—The Vaile & Young Sheet & Metal Mfg. Co. will construct a 1-story, 125 x 750-foot plant addition.

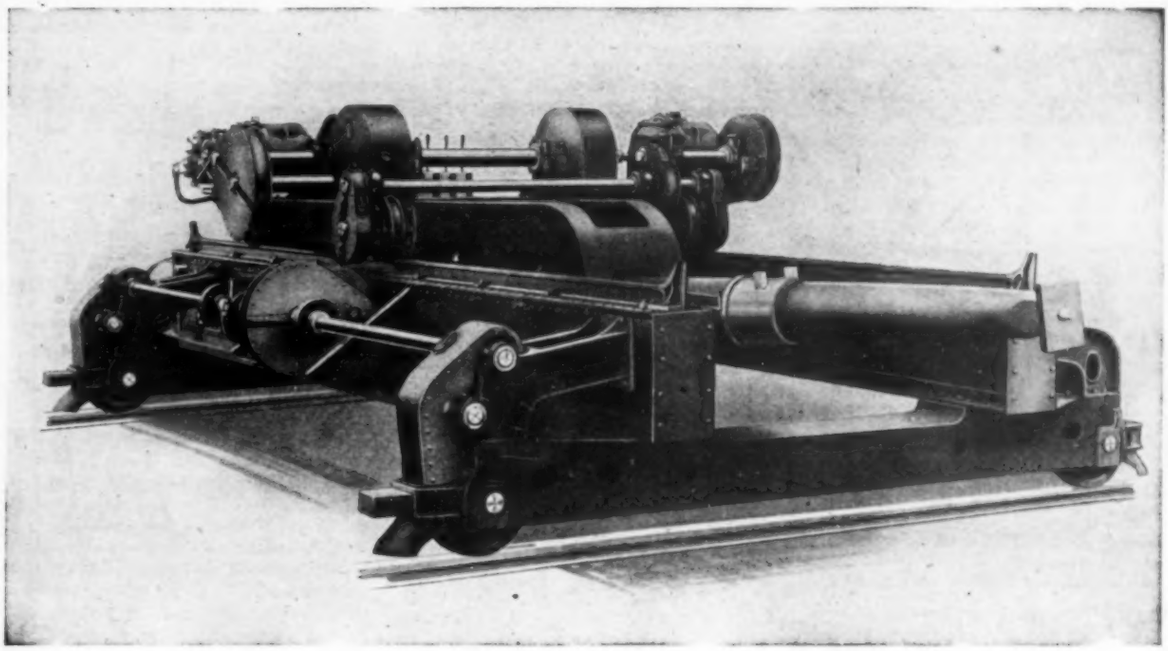
BALTIMORE.—The John T. Lewis Bros. Co. awarded the contract for a $2,000,000 ammunition plant to the McIver Construction Co., Baltimore.

RICHMOND, VA.—Work will be started shortly on the construction of a machine shop and power house for the Chesapeake & Ohio railroad.

YORKTOWN, VA.—The bureau of yards and docks will build a $250,000 fuel oil storage plant here.

W-S-M

STEEL PLANT EQUIPMENT
COKE OVEN MACHINERY
GAS PRODUCERS
ORE AND COAL HANDLING MACHINERY
SPECIAL CRANES
MINING MACHINERY
HYDRAULIC TURBINES



## Charging Machines

The Wellman-Seaver-Morgan Company originated, first built, developed, and for many years was the sole constructor of mechanical chargers for open hearth furnaces.

The W-S-M Low Type Charger is pictured above. Some conditions indicate the use of the High Type Charger or the Crane Type.

We are prepared to build a special machine for your particular requirements.

Bulletin A 7, "W-S-M Charging Machines and Manipulators," will be sent on request.

THE WELLMAN-SEAVER-MORGAN CO.
CLEVELAND, OHIO, U.S.A.

*Say you saw it in* THE IRON TRADE REVIEW

# Activities in the Central States

BAYFIELD, WIS.—A complete water purification plant will be built by the city, the council having authorized the expenditure.

CEDARBURG, WIS.—The common council has taken bids for the construction of a new bridge over the Milwaukee river to cost $6500.

GLIDDEN, WIS.—A plant to cost about $35,000 will be erected here by the Northern Wood Products Co., Chicago, to replace the factory damaged by fire late in July.

GREEN BAY, WIS.—The Green Bay Wire Works, capitalized at $30,000, has been chartered by A. W. Priest, president, T. E. Fox, secretary-treasurer, and C. E. Maser, vice president.

JANESVILLE, WIS.—The Blodgett-Holmes Milling Co. has increased its capital from $200,000 to $275,000 to provide for the enlargement of its plant.

JEFFERSON, WIS.—O. C. Uehling, architect, Milwaukee, has the contract to prepare plans and supervise the erection of a $50,000 tuberculosis sanatorium for the Jefferson county board of supervisors.

KENOSHA, WIS.—The Kenosha Structural & Boiler Works has been awarded the contract for the steel work on an office building, 35 x 170 feet, for the Black Cat Textiles Co., to cost $25,000.

KENOSHA, WIS. — The Winther Motor Truck Co. has started work on its motor truck factory which will be 150 x 350 feet, and with full equipment of machinery, tools, etc., will cost between $125,000 and $150,000.

MANITOWOC, WIS.—The common council has accepted the bid of the Allis-Chalmers Mfg. Co., Milwaukee, for furnishing and installing a turbo-generator set in the municipal light and waterworks pumping station.

MILWAUKEE.—The Sanitary Refrigerating Machine Co. has increased its capital and is enlarging its plant.

MILWAUKEE.—The Allis-Chalmers Mfg. Co. will erect a new employes' clubhouse at a cost of $25,000.

MILWAUKEE.—The Mechanical Appliance Co. is erecting a warehouse and shop addition, 90 x 110 feet.

MILWAUKEE.—The T. C. Esser Co. is building a warehouse, 60 x 147 feet, 2-story and basement. The building will cost $30,000.

MILWAUKEE.—The Badger-Packard Machinery Co. is erecting a one-story warehouse, 50 x 100 feet.

MILWAUKEE. — The International Harvester Co. has a permit to build a 1-story brick and concrete storage building, 38 x 262 feet, to cost $40,000.

MILWAUKEE. — The Milwaukee Steel Foundry Co. will complete a large addition and equip it with a new 3-ton Heroult furnace, within 60 days.

MILWAUKEE. — Klug & Smith, Mack block, engineers, are preparing plans for the enlargement of the power plant of the Norwood, O., works of the Allis-Chalmers Mfg. Company.

MILWAUKEE.—The Universal Machinery Co. is taking bids for the equipment of the power plant to be erected in conjunction with its new foundry and machine shop now under construction.

MILWAUKEE.—Chas. H. Stehling & Son, manufacturers of tannery machinery and equipment, have the contract to design and equip a three-story brick and mill tannery addition for the Elkert Bros. Leather Co.

MILWAUKEE.—George Diamond, head of the Diamond Box Co., has organized the George Diamond Economy Process, with a capital stock of $30,000, to manufacture machines and machinery.

MILWAUKEE.—The American Tar Products Co. will build a plant and has awarded the general contract for the first unit, 60 x 90 feet, of brick and steel, to Meredith Bros. Co.

MILWAUKEE. — Articles of incorporation have been filed by the Crown Ventilator Co. The capital stock is $25,000 and the incorporators are Paul D. Durant, Herman F. Frederick and R. E. Pfeil. The company will manufacture sheet metal products.

MILWAUKEE.—The Horizontal Hydraulic Hoist Co. has purchased the business of the Young Patent Hoist Co. and will enlarge its production of horizontal hydraulic hoists and dump bodies for motor trucks. Edward R. Bacon is president and general manager.

OCONTO, WIS.—The Holt Hardwood Co. has been organized to take over the plant and business of the W. E. Williams Co. The

RACINE, WIS.—The Belle City Malleable Iron Co. awarded contracts for the erection of a 2-story warehouse and shipping room, 80 x 190 feet.

RACINE, WIS. — The Hamilton-Beach Mfg. Co. has awarded contracts for the erection of a 3-story brick and mill factory and warehouse addition, 80 x 150 feet, to cost about $50,000.

RACINE, WIS.—The Racine county board has authorized the purchase of two 150-horsepower boilers and the construction of a 125-foot stack at the county asylum and poor house, to cost about $15,000.

RICE LAKE, WIS.—A bond issue of $20,000 has been authorized by the common council for improving the hydro-electric light and power plant.

WASHBURN, WIS.—The B. & W. Boiler Co., Bayonne, N. J., has taken the contract to install three 400-horsepower boilers in the enlarged power plant of the DuPont Co.'s TNT works at Barksdale, near here.

WEST ALLIS, WIS. — The North End Foundry Co. will erect a one-story brick and steel addition to its gray iron shop which will be 60 x 80 feet and cost about $20,000, with new equipment.

BATTLE CREEK, MICH.—The Franklin Brass Foundry Co. has taken over the plant of the American Column Co.

DETROIT.—The Detroit Foundry Co. will make additions to its foundry, costing $10,000.

DETROIT.—The Motors Metal Mfg. Co. is building two additions, 60 x 200 and 50 x 60 feet.

EATON RAPIDS, MICH.—The Economy Chemical Co., E. F. Mix, president, has been organized to manufacture aluminum solder.

GRAND RAPIDS, MICH.—The Wolverine Brass Works recently obtained a permit to erect a brick addition to its factory at a cost of $65,000.

HASTINGS, MICH. — The American Machine & Tool Co., Chicago, will move its plant to this city.

JACKSON, MICH. — The Briscoe Motor Corp. is building an addition, 200 x 200 feet.

MOUNT PLEASANT, MICH.—The Transport Truck Co. is planning to build two structures, each 75 x 700 feet. Milton A. Holmes is president.

PONTIAC, MICH.—The plant of the Precision Castings Co., recently damaged by fire, is being rebuilt. There will be two units, each 80 x 230 feet.

SAGINAW, MICH. — A $1,100,000 motor car castings plant is to be erected here by the General Motors Co. The buildings will include a foundry 163 x 440 feet, core building, 100 x 400 feet, cleaning room, 110 x 265 feet, pattern shop and storage building, 100 x 120 feet, and a power house.

CHICAGO.—Gits Bros. Mfg. Co. plans the erection of an addition, 125 x 125 feet.

CHICAGO.—The Manufacturers' Equipment Co. is building a 1-story factory 30 x 280 feet.

CHICAGO.—Templeton Kenly & Co., Ltd., is remodeling its plant at a cost of $30,000.

CHICAGO. — The Master Trucks, Inc., bought a site and will build a plant.

CHICAGO.—The Robert Metal Co., capitalized at $1000, has been chartered by Edward Berkson, Jack Gordon and Anna Drucher.

CHICAGO.—The Equitable Auto & Parts Corp., capitalized at $20,000, has been chartered by H. Lewis, H. C. Greenbaum and W. S. Newburger.

CHICAGO.—The Industrial Steel & Brass Corp., capitalized at $1000, has been chartered by Leo L. Mann, Paul L. Mann and Eugene D. Sullivan.

CHICAGO.—The Dunbar Drop Forge Co., capitalized at $25,000, has been chartered by Bernhard Stenge, Charles S. Wherton and Benjamin Samuels.

CHICAGO.—W. J. Accola, representing a company now being formed, has leased the West Pullman car works and plans to improve the plant and equipment at a cost of $150,000.

GALESBURG, ILL. — The Dependable Truck & Tractor Co. plans to establish a plant.

GALESBURG, ILL.—The power plant of the Rock Island Southern Traction Co. recently was badly damaged by fire. The loss has not been estimated but it is thought the heaviest will be to machinery.

LA SALLE, ILL. — The Mathiessen & Hegeler Zinc Co. is building a 2-story factory, 131 x 261 feet, costing $150,000.

PEORIA, ILL.—The By-Products Co., capitalized at $10,000, has been incorporated by Thomas Aylward, Harris J. Harman and Jacob A. Harman.

SOUTH CHICAGO, ILL.—The Iroquois Iron Co. is building a 1-story machine shop, 56 x 66 feet, to cost $17,000.

EVANSVILLE, IND.—The Graham Valve Co., Booneville, Ind., will build a factory and office building, 50 x 265 feet.

FT. WAYNE, IND.—The Automobile Mfg. & Engineering Co., capitalized at $500,000,

# New Business in Canada

PRINCE RUPERT, B. C.—The Prince Rupert Hydro Electric Co. is making preparations for the construction of a waterpower plant to cost about $100,000.

VANCOUVER, B. C.—The Nasmyth Lumber Co. will build a sawmill and flume, and also proposes to build a box factory to cost about $150,000.

VICTORIA, B. C.—The dominion government will undertake the construction of terminals on the Songhees reserve and will lay 70 miles of steel rails on Vancouver island.

YMIR, B. C.—The question of installing a mill to cost $100,000 is being considered by the Hudson Silver Lead Co., owners of the Yankee Girl mine here.

ARNPRIOR, ONT.—F. C. Huyck & Sons Co., Albany, N. Y., wll build an addition to its plant here to cost about $60,000.

KITCHENER, ONT.—The Lang Tanning Co. will build a latch and boiler house at a cost of $18,000.

NIAGARA FALLS, ONT.—The National Abrasive Co., Boston, will establish a manufacturing plant here.

NORTH BAY, ONT.—The Bay Mfg. Co., Ltd., has been incorporated to manufacture machinery, tools, implements, etc., with $40,000 capital by Walter E. Morgan, Wyatt H. Bowlby, William H. Symons and others of North Bay.

TORONTO, ONT.—The Electric Oil & Gas Heating Co., Ltd., has been incorporated to manufacture oil burning devices, electric heating furnaces and appliances, machinery, etc., with $100,000 capital, by John L. Scott, Francis W. Trickey, David Archer and others, of Toronto.

WINDSOR, ONT.—Isaac Plewes and William Shaw, both of Toronto, Ont., have purchased a site here and will establish a mill to cost about $150,000.

AMHERST, N. S.—The Robb Engineering Works, Ltd., has awarded the contract to T. Ainsley Allen, for a brick and concrete addition to cost $60,000.

LEVIS, QUE.—The city council is having plans prepared for the construction of a filtration plant to cost $100,000.

MONTREAL, QUE. — The Ingersoll Machine Co., Ltd., has been incorporated to manufacture machinery, ammunition, tools, boilers, implements, iron, steel and other metals, etc., with $500,000 capital stock; by Louis A. David, Louis P. Crepeau, S. H. R. Bush and others, of Montreal.

SHERBROOKE, QUE.—The Campbell Howard Machine Co., Ltd., has been incorporated to manufacture machinery, tools, iron, brass, etc., with $650,000 capital stock; by John T. Hackett, Jules Bruneau, Clara Thomas and others of Montreal, Que.

VERDUN, QUE. — The British Munitions Co., Ltd., King's Park, has let the general contract to E. G. M. Cape & Co. for the erection of an addition to cost $30,000.

# New Trade Publications

WELDING AND CUTTING APPARATUS.—The Bastian-Blessing Co., Chicago, is issuing a catalog devoted to its line of welding and cutting apparatus.

HARDWARE SPECIALTIES. — The Fanner Mfg. Co., Cleveland, has issued an illustrated catalog describing its line of hardware specialties, among which are malleable iron flask hinges; hard, white malleable iron stars, for use in tumbling barrels, and various types of foundry chaplets.

PIPE FITTINGS.—A 24-page booklet, containing data on pipe fittings has been issued by the Lynchburg Foundry Co., Lynchburg, Va. Various fittings such as pipe flanges, companion flanges, blank flanges, standard ells, reducing ells, base ells, tees, crosses, laterals, reducers, etc., are described.

HOSE FITTINGS.—The Cleveland Pneumatic Tool Co., Cleveland, is circulating a 4-page folder in which is described air valves air hose couplings, air hose nipples, air hose menders, hose clamps, hose fittings, hose clamp tools, hose nipples, etc. The folder also describes an air seated valve which requires no packing.

AIR TOOLS.—A 6-page folder illustrating and describing air tools, recently was issued by the Cleveland Pneumatic Tool Co., Cleveland. Among the tools described are: Four-piston air drills, geared air drills, light weight four piston air drills, corner drills, rotary breast drills, air riveters, sand hammers, and hose couplings.

SOLDERING IRONS. — An attractive folder is being distributed to the trade by the Cutler-Hammer Mfg. Co., Milwaukee, describing and illustrating an electric soldering iron. The iron is electrically heated and thus saves time and labor. It is equipped with an automatic rack which reduces the amount of current when the iron is not in use and yet prevents it from becoming cold.

THREADING MACHINERY.—The Landis Machine Co., Waynesboro, Pa., is issuing a booklet describing its line of thread cutting machinery which includes several models of bolt cutting machines, chaser holders, rotary die heads, bolt-pointer heads, chaser grinders, pipe-die heads and lead screw attachments. The booklet is well illustrated and also contains tables of standard thread parts and cutting speeds.

LIFTING MAGNETS.—The Ohio Electric & Controller Co., Cleveland, has issued a booklet describing its lifting magnets. It is pointed out that the magnets are of rigid construction and are built to withstand hard usage and that no bolts or nuts are exposed. The booklet includes a table giving dimensions and lifting capacities of magnets and data concerning current required, and the control of magnets.

COAL CONVEYOR.—A leaflet, containing several diagrams of coal conveyors, is being circulated by the John F. Godfrey Co., Elkhart, Ind. The conveyer is operated by means of an electrically-driven hoist, which is so constructed that when the loaded bucket is elevated to the necessary height, it is sent to the discharging place at the rate of 200 feet a minute. It is possible to store 1000 tons of coal to each 100 feet of conveyor track.

UTILITY TRUCK.—The Baker R. & L. Co., Cleveland, recently published an attractive 16-page pamphlet in which is illustrated and described an electric shop truck. The latter is provided with space for over-size batteries. The loading space is large and the turning radius and flexibility of control permits rapid handling in congested quarters. The truck is equipped with a 24-volt motor, and has a two and four wheel drive. In addition to carrying a load, it may be utilized for pulling trailers.

BORING AND MILLING MACHINE.—The Landis Tool Co., Waynesboro, Pa., has just issued an illustrated catalog describing its new floor-type horizontal boring, milling and drilling machine. This machine is a self-contained unit of powerful construction. It is equipped with variable feed changes and a universal tilting and rotary table which permits machining of several sides of a piece at one setting. Two types of facing heads for use on boring bars are also described and illustrated.

HAND AND TRAILER TRUCKS. — The Abell-Howe Co., Chicago, is issuing a pamphlet describing its line of trucks. These are built in several models and have a carrying capacity of 4000 pounds. A novel feature of these trucks consists of a detachable tongue and front wheel which permits a truck load of material to be left in storage without the tongue getting in the way and taking up valuable floor space. The pamphlet contains many illustrations showing the trucks in actual use.

CUTTERS. — The Cleveland Milling Machine Co., Cleveland, has issued a comprehensive catalog and reference book on cutters. This publication is profusely illustrated and in its 225 pages illustrates and details milling cutters, gear cutters, special tools, reamers, counterbores, formed cutters and hobs of every description. In addition to the detailed descriptive matter this book presents valuable data on the theory of cutters, gear teeth and different threads. Tables of decimal equivalents, drill sizes, cutting speeds and weights, constitute special reference features of the work. In the introduction, the company outlines its organization and presents a short account of the development of the cutting equipment manufacture.

# Iron and Steel Prices

**Corrected to Tuesday Noon**

## IRON ORE

| Superior Ores, Per Ton, Lower Lake Ports | |
|---|---|
| Old range Bessemer, 55 iron | $6.40 |
| Mesabi Bessemer, 55 iron | 6.15 |
| Old range non-Bess., 51½ iron | 5.65 |
| Mesabi non-Bess., 51½ iron | 5.50 |

## WAREHOUSE PRICES

| | |
|---|---|
| Steel bars, Chicago | 4.17c |
| Steel bars, Cleveland | 4.07c |
| Steel bars, Detroit | 4.13c |
| Steel bars, Philadelphia | 4.13c |
| Steel bars, New York | 4.145c |
| Steel bars, St. Louis | 4.24c |
| Steel bars, Cincinnati | 4.13c |
| Steel bars, St. Paul | 4.395c |
| Steel bars, Buffalo | 4.10c |
| Iron bars, Buffalo | 4.70c |
| Iron bars, Chicago | 4.10c |
| Iron bars, Cleveland | 4.67c |
| Iron bars, Detroit | 4.75c |
| Iron bars, St. Louis | 4.24c |
| Iron bars, Cincinnati | 4.13c |
| Iron bars, Philadelphia | 4.60c to 4.73c |
| Iron bars, New York | 4.745c |
| Shapes, Chicago | 4.27c |
| Shapes, Detroit | 4.23c |
| Shapes, St. Louis | 4.34c |
| Shapes, St. Paul | 4.495c |
| Shapes, New York | 4.245c |
| Shapes, Cleveland | 4.17c |
| Shapes, Philadelphia | 4.23c |
| Shapes, Buffalo | 4.20c |
| Shapes, Cincinnati | 4.23c |
| Plates, Buffalo | 4.45c |
| Plates, Chicago | 4.52c |
| Plates, Detroit | 4.48c |
| Plates, St. Louis | 4.59c |
| Plates, St. Paul | 4.745c |
| Plates, New York | 4.495c |
| Plates, Cleveland | 4.42c |
| Plates, Philadelphia | 4.48c |
| Plates, Cincinnati | 4.48c |
| No. 10 blue anl. sheets, Chi. | 5.52c |
| No. 10 blue anl. sheets, Cleve. | 5.42c |
| No. 10 blue anl., Buffalo | 5.45c |
| No. 10 blue anl., sheets, St. L. | 5.59c |
| No. 10 blue anl. sheets, Cinci. | 5.48c |
| No. 10 blue anl. sheets, St. Paul | 5.745c |
| No. 10 blue anl. sh., Detroit | 5.48c |
| No. 28 black sheets, Chgo. | 6.27c |
| No. 28 black sheets, Cleve. | 6.42c |
| No. 28 black sheets, Cinci. | 6.48c |
| No. 28 black, Detroit | 6.48c |
| No. 28 black sheets, St. L. | 6.59c |
| No. 28 black sheets, St. Paul | 6.745c |
| No. 28 galv. sheets, Chgo. | 7.52c |
| No. 28 galv. sheets, Cleve. | 7.67c |
| No. 28 galv. sheets, Cinci. | 7.73c |
| No. 28 galvanized, Detroit | 7.73c |
| No. 28 galv. sheets, St. L. | 7.59c |
| No. 28 galv. sheets, Buffalo | 7.70c |
| Hoops, Cleveland | 4.92c |
| Hoops, Detroit | 4.98c |
| Hoops, Buffalo | 4.95c |
| Cold rolled sheets, Buffalo | 6.45c |
| Cold rolled steel | list and 10 |

## IRON AND STEEL SCRAP

(Prices in Gross Tons)

### STEEL WORKS USE

| | |
|---|---|
| Bundled sheets, Cincinnati | $23.00 to 23.50 |
| Bundled sheets, Pittsburgh | 22.00 |
| Bundled sheets, Cleveland | 24.50 to 25.50 |
| Bundled sheets, Buffalo | 24.00 to 25.00 |
| Boiler plate, cut, No. 1, Chg. | 27.50 to 28.50 |
| Boiler plate, cut No. 1, St. L. | 25.50 to 26.00 |
| Frogs, switches, guards, St. L. | 28.50 to 29.00 |
| Frogs, switches, guards, Chgo. | 29.00 |
| Heavy melting steel, Pitts. | 29.00 |
| Heavy melting steel, Buffalo | 30.00 |
| Heavy melting steel, Chgo. | 29.00 |
| Heavy melt'g steel, Cleveland | 29.00 |
| Heavy melting steel, Cinci. | 28.00 to 28.50 |
| Heavy melt'g steel, east. Pa. | 28.00 to 29.00 |
| Heavy melting steel, N. Y. | 26.00 |
| Heavy melting steel, St. L. | 28.00 to 28.50 |
| Heavy melt'g steel, Birming. | 27.00 to 27.50 |
| Baled sheets, Cleveland | 28.50 to 29.00 |
| Baled sheets, Pitts. | 26.00 |
| Baled sheets, Chgo. | 29.00 |
| Knuckles, couplers, Chgo. | 34.00 |
| Knuckles, coup., St. Louis | 33.00 to 33.50 |
| Low phos. steel, Buffalo | 37.50 |
| Low phos. steel, Pittsburgh | 39.00 |
| Low phos. crops eastern Pa. | 39.00 |
| Low phos. guaranteed E. Pa. | 36.50 |
| Shoveling steel, Chicago | 29.00 |
| Shoveling steel, St. Louis | 28.50 to 29.00 |
| Springs, Chgo. | 34.00 |
| Steel rails, short, Chicago | 34.00 |
| Steel rails, short, Cleveland | 34.00 |
| Steel rails, short, St. Louis | 30.75 to 31.25 |
| Steel rails, old, Birmingham | 28.00 to 30.00 |
| Stove plate, Chgo. | 28.00 to 28.50 |
| Stove plate, Cincinnati | 22.50 to 23.00 |
| Stove plate, St. Louis | 26.00 to 27.00 |
| Stove plate, N. J. points | 27.25 |
| Stove plate, Birmingham | 24.00 to 25.00 |
| Stove plate, Buffalo | 27.50 to 28.00 |
| Stove plate, eastern Pa. | 29.00 |
| Stove plate, Cleveland | 25.00 to 25.50 |
| Stove plate, Pittsburgh | 26.50 to 27.00 |

## Freight Rates, Pig Iron

| | |
|---|---|
| Mahoning and Shenango valleys to: | |
| Cleveland | $1.40 |
| Newark, N. J. | 4.40 |
| Boston | 4.60 |
| Philadelphia | 4.10 |
| Pittsburgh | 1.40 |
| St. Louis | 4.60 |
| Minneapolis, St. Paul | 5.70 |
| Buffalo to: | |
| Albany, N. Y. | $1.75 |
| New England (rail) | 3.90 |
| New York and Brooklyn (rail) | 3.90 |
| Virginia furnaces to: | |
| Philadelphia | $4.10 |
| New England | 4.70 |
| Brooklyn, Jersey City, Newark | 4.40 |
| Birmingham, Ala., to: | |
| Boston | $7.50 |
| Cincinnati | 3.60 |
| Chicago | 5.00 |
| Cleveland | 5.00 |
| Louisville, Ky. | 3.30 |
| Minneapolis, St. Paul | 7.30 |
| New York (r. and w.) | 7.50 |
| Philadelphia (r. and w.) | 6.60 |
| Pittsburgh | 6.10 |
| Savannah, Ga. | 3.40 |
| St. Louis | 4.25 |
| Chicago to: | |
| Des Moines | $3.50 |
| Minneapolis, St. Paul | 2.50 |
| Milwaukee | .60 |
| Moline, Ill. | 1.40 |
| Omaha | 4.50 |
| St. Louis | 1.90 |
| Ironton and Jackson, O., to: | |
| Chicago | $3.75 |
| Cincinnati | 1.75 |
| Cleveland | 2.40 |
| Detroit | 2.60 |
| Indianapolis | 2.30 |
| Minneapolis, St. Paul | 5.70 |
| Duluth, Minn., to: | |
| Minneapolis, St. Paul | $1.60 |
| Mayville, Wis.: | |
| Minneapolis-St. Paul | $2.20 |

## Freight Rates, Finished Material

| Pittsburgh, carloads, per 100 lbs., to: | |
|---|---|
| New York | 24.5 cents |
| Philadelphia | 23.0 cents |
| Boston | 27.0 cents |
| Buffalo | 21.5 cents |
| Baltimore | 22.5 cents |
| Cleveland | 17.0 cents |
| Cincinnati | 23.0 cents |
| Chicago | 27.0 cents |
| Detroit | 23.0 cents |
| Minneapolis and St. Paul | 49.5 cents |
| Denver | $1.09 |
| St. Louis | 33.5 cents |
| New Orleans | 38.5 cents |
| Birmingham | 56.5 cents |
| Pacific coast (all rail) | $1.25 |
| Pacific coast (tin plate) | 1.25 |

### IRON MILL USE

| | |
|---|---|
| Angle bars, iron, Chgo. | 39.00 |
| Angle bars, steel, St. Louis | 30.75 to 31.25 |
| Angle splice bars, St. Louis (iron) | 37.50 to 38.00 |
| Arch bars, transoms, Chgo. | 45.50 to 46.50 |
| Arch bars and transoms, St. Louis | 44.00 to 44.50 |
| Busheling, No. 1, Cleveland | 29.00 to 30.00 |
| Busheling, No. 1, Buffalo | 29.00 to 30.00 |
| Busheling, No. 2, Buffalo | 21.00 to 23.00 |
| Busheling, No. 1, Pittsburgh | 32.00 |
| Busheling, No. 1, Cincinnati | 26.00 to 26.50 |
| Busheling, No. 1, Chgo. | 30.50 to 31.00 |
| Busheling, No. 2, Chgo. | 20.00 to 21.00 |
| Busheling, No. 1, St. Louis | 29.00 to 29.50 |
| Cast borings, New York | 16.25 to 16.75 |
| Cast borings, eastern Pa. | 19.00 |
| Cast borings, Buffalo | 18.00 to 19.00 |
| Cast, borings, Cleveland | 18.50 to 19.00 |
| Cast borings, Cincinnati | 17.00 to 17.50 |
| Cast borings, Pittsburgh | 19.00 |
| Cast borings, Birmingham | 17.00 to 18.00 |
| Cast borings, Chgo. | 18.50 to 19.00 |
| Cast borings, St. Louis | 18.00 to 18.50 |
| City wrought, long, N. Y. | 30.00 |
| Cut forge, Chgo. | 32.00 to 32.50 |
| Forge flashings, small, Cleve. | 27.00 to 27.50 |
| Forge flashings, large, Cleve. | 27.50 to 28.00 |
| Forge No. 1, eastern Pa. | 28.00 to 29.00 |
| Grate bars, Buffalo | 27.50 to 28.00 |
| Grate bars, Cleveland | 25.50 to 26.00 |
| Grate bars, N. J. points | 27.25 |
| Iron axles, Pittsburgh | 46.50 |
| Iron axles, Cincinnati | 43.50 to 44.00 |
| Iron axles, Cleveland | 46.50 |
| Iron axles, Chicago | 46.50 |
| Iron axles, eastern Pa. | 46.50 |
| Iron axles, St. Louis | 46.00 to 46.50 |
| Iron axles, Buffalo | 45.00 to 47.00 |
| Iron rails, Chicago | 39.00 |
| Iron rails, Buffalo | 36.00 to 37.00 |
| Iron rails, Cincinnati | 34.00 to 35.00 |
| Iron rails, St. Louis | 38.00 to 38.50 |
| Iron rails, Cleveland | 37.00 to 38.00 |
| Machine turnings, Cincinnati | 17.00 to 17.50 |
| Machine turnings, Cleve. | 18.50 to 18.75 |
| Machine turnings, Buffalo | 17.00 to 17.50 |
| Machine turnings, N. Y. | 16.25 to 16.75 |
| Machine turnings, Pitts. | 18.00 to 19.00 |
| Machine turnings, east. Pa. | 19.00 |
| Machine turnings, Birming. | 16.00 to 17.00 |
| Machine turnings, Chicago | 17.50 to 18.00 |
| Machine shop turnings, St. L. | 18.50 to 19.00 |
| Pipes and flues, Cleveland | 28.00 to 29.00 |
| Pipes and flues, Chicago | 27.50 to 28.00 |
| Pipes and flues, St. Louis | 26.25 to 26.75 |
| R. R. mch. cast, No. 1, Buff. | 34.00 |
| R. R. wrgt. No. 1, Buffalo | 34.00 |
| R. R. wrgt., No. 1, east Pa. | 34.00 |
| Railroad wrgt. No. 1 Cinci. | 33.50 to 34.00 |
| Railroad wrgt., No. 1, Cleve. | 34.00 |
| R. R. wrought, No. 1, Pitts. | 34.00 |
| Railroad wrgt., No. 2, Chgo. | 32.00 to 32.50 |
| Railroad wr'ght, No. 1, Chgo. | 33.50 to 34.00 |
| R. R. wrgt. No. 1, Birming. | 28.00 to 30.00 |
| No. 1 yard wrought East Pa. | 33.00 |
| No. 1 busheling wrgt., E. Pa. | 31.00 |
| Sheet wrought, Pittsburgh | 34.00 |
| Railroad wrgt., No. 1, St. L. | 33.00 to 33.50 |
| Railroad wrought, No. 2 | 32.50 to 33.00 |
| Wrought pipe, Buffalo | 27.00 to 28.00 |
| Wrought pipe, eastern Pa. | 33.00 |
| Wrought pipe, ungraded, eastern Pa. | 29.00 |

### IRON OR STEEL WORKS USE

| | |
|---|---|
| Axle turnings, Cleveland | $24.00 |
| Axle turnings, Buffalo | 24.00 |
| Heavy axle turn'gs, E. Pa. | 24.00 |
| Heavy axle turnings, Pitts. | 24.00 |
| Shafting, New York | 35.50 |
| Shafting, eastern Pa. | 39.00 |
| Steel car axles, Pittsburgh | 46.50 |
| Steel car axles, Birmingham | 38.00 to 40.00 |
| Steel car axles, New York | 43.00 |
| Steel car axles, Buffalo | 44.00 to 46.00 |
| Steel car axles, Cleveland | 44.00 |
| Steel car axles, eastern Pa. | 46.50 |
| Steel car axles, Chgo. | 46.50 |
| Shafting, St. Louis | 38.50 to 39.00 |
| Steel car axles, St. Louis | 46.00 to 46.50 |

### IRON FOUNDRY USE

| | |
|---|---|
| Car wheels, (iron), Pitts. | $29.00 |
| Car wheels, (steel), Pitts. | 34.00 to 35.00 |
| Car wheels, eastern Pa. | 29.00 |
| Car wheels, Buffalo | 29.00 |
| Car wheels, Chicago | 29.00 |
| Car wheels, St. Louis | 28.50 to 29.00 |
| Car wheels, Birmingham | 28.00 to 30.00 |
| Car wheels, Cleveland | 30.00 |
| Tram car wheels, Birming. | 27.00 to 29.00 |
| Cast, No. 1, Birmingham | 28.00 to 30.00 |
| Cast, No. 1, cupola east. Pa. | 34.00 |
| Cast No. 1, Cleveland | 32.00 to 33.00 |
| Cast, No. 1, Cincinnati | 33.00 to 34.00 |
| Cast, 1, heavy, N. Y. | 32.25 to 32.50 |
| Cast, 1, machy., N. Y. | 32.25 to 32.50 |
| Cast, No. 1, Chicago | 34.00 |
| Cast, No. 1, Pittsburgh | 32.50 to 33.00 |
| Cast, No. 1, St. Louis | 31.50 to 32.00 |
| Malleable, Cincinnati | 30.00 to 34.00 |
| Malleable, Cleveland | 30.00 to 34.00 |
| Malleable, Buffalo | 29.00 to 34.00 |
| Malleable, Pittsburgh | 33.00 to 34.00 |
| Malleable, east. Pa. | 29.00 |
| Malleable, cupola, East Pa. | 33.00 |
| Malleable railroad, Chgo. | 34.00 |
| Malleable, agricultural, Chgo. | 33.00 to 33.25 |
| Malleable railroad, St. Louis | 33.50 to 34.00 |
| Malleable agricultural, St. L. | 32.50 to 33.00 |

### MISCELLANEOUS USES

| | |
|---|---|
| Boiler punchings, Chgo. | 36.00 to 36.50 |
| Reroll. rails, 5 ft. & ov., Pitts. | 34.00 |
| Reroll. rails, 5 ft. & ov., Chgo. | 34.00 |
| Reroll. rails, 5 ft. & ov., E. Pa. | 34.00 |
| Reroll. rails, 5 ft. & ov., St. L. | 33.50 to 34.00 |
| Reroll. rails, 5 ft. or over, Cleve. | 34.00 |
| Rerolling rails, long, Birm. | 37.50 to 38.50 |
| Locomotive tires, Chgo. | 45.50 to 46.50 |
| Locomotive tires, St. Louis | 43.50 to 44.00 |